


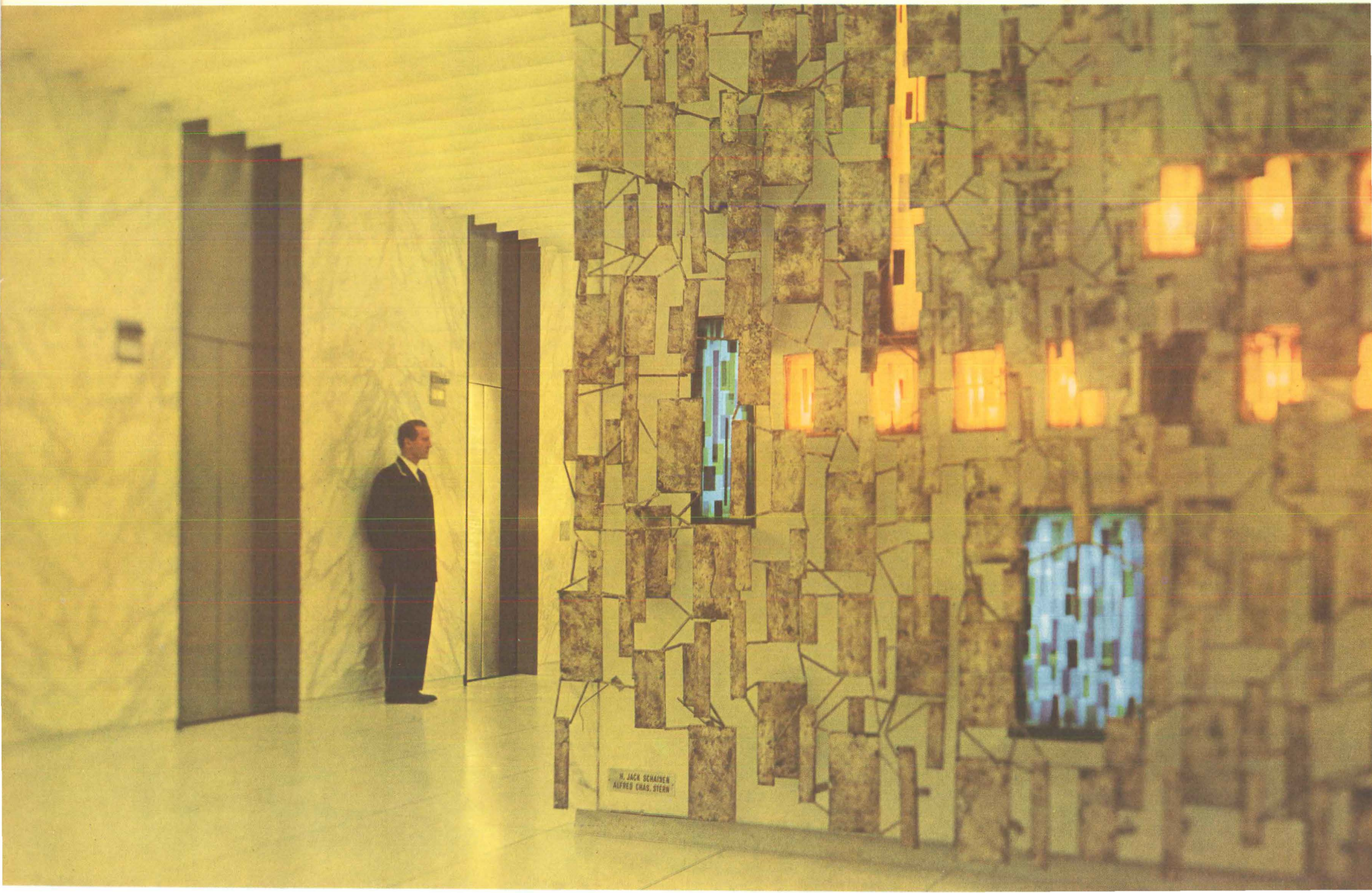
ARCHITECTURAL FORUM THE MAGAZINE OF BUILDING DECEMBER 1962

# FORUM





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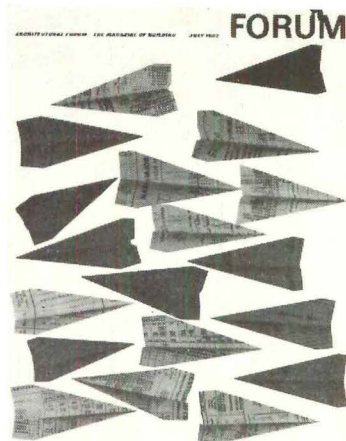


## PUBLISHER'S NOTE

For some time FORUM has been receiving the nicest kinds of compliments on its covers. And though a magazine's cover is hardly as significant as its contents, it should reflect some of the quality of what's inside.

This month's cover, heralding the power and joy of a holy season, is the work of one of the world's foremost contemporary painters, Marc Chagall. It is taken from a photograph of one of 12 stained-glass windows representing the Tribes of Israel, which were installed recently in the synagogue of the Hadassah-Hebrew University Medical Center in Jerusalem (shown below just before the windows were set). The center itself was designed by Architect Joseph Neufeld. The window, which depicts the Tribe of Joseph, also appears in the handsome book *The Jerusalem Windows of Marc Chagall*, published by George Braziller, Inc.

The November cover was done by a talented, if lesser-known artist: Deborah Winchester, age 10, a member of the fifth grade at Columbus, Indiana's new Parkside Elementary School. When the editors set about publishing Parkside, they asked Superintendent Clarence E. Robbins if, for their first fall art class, his students would make their own interpretations of the school. The



result: some 500 delightful paintings, of which 12 were chosen for the cover and inside.

The selection of covers, like the appearance of the rest of the magazine, is the responsibility of Art Director Paul Grotz, who many times has turned to his former associate art director, Ray Komai, for the "constructed" covers that help set the magazine apart. A recent example appeared in July: Airline timetables folded into a flight of multicolored paper planes for the "airports" issue (above). It was pronounced the "best cover ever" by the printing foreman, who reproduces FORUM's covers on heavy offset stock. Other tributes to our covers have come from the Art Directors Club of New York, in the form of a hatful of Certificates of Merit over the years.

And while casting modesty to the winds in behalf of our artists, it might be added that last month FORUM received its 28th award in *Industrial Marketing's* Annual Editorial Achievement Competition ("best article, best series, best issue, best research").

This time it was: "best improvement in design."—J.C.H.J.R.

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Cover: Stained-glass window by Marc Chagall; photo by Sabine Weiss—Rapho-Guillumette.  
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## **THE JOB:**

**First National Bank of Ft. Worth**

## **THE ARCHITECTS:**

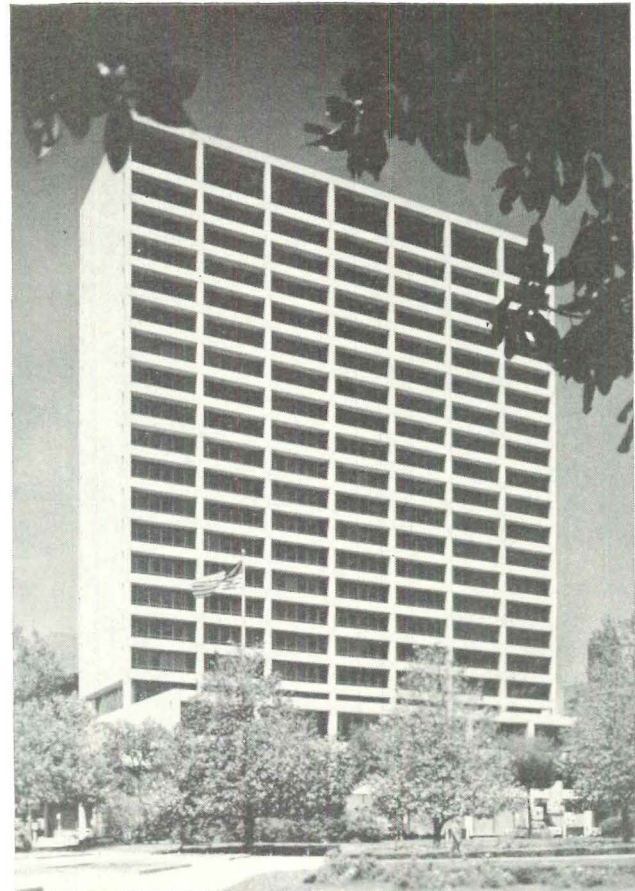
**Skidmore, Owings and Merrill, and  
Preston M. Geren, Associate Architects**

## **THE INTERIOR DECORATOR:**

**Melanie Kahane, F.A.I.D.,  
Melanie Kahane Associates**

## **THE FLOOR:**

**Armstrong Imperial Excelon Tile**

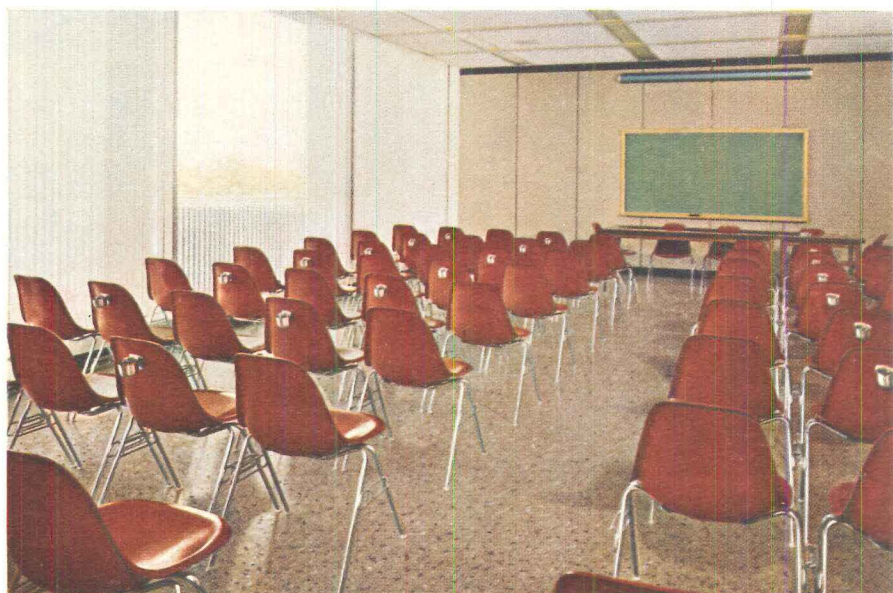


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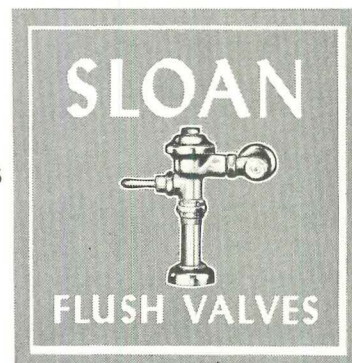
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*Transit systems move ahead (below)*

*President signs antibias order (page 7)*

*Alcoa expands its renewal activity (page 10)*

*Berkeley competition results (page 11)*

## SAN FRANCISCO SETS THE PACE IN TRANSIT

While experts in Detroit and Washington argued the merits of various systems of urban transportation last month, close to 500,000 San Francisco Bay Area residents voted for a \$792 million rapid transit system. Needing 60 per cent approval at the polls, the scheme squeaked by with 60.7 per cent. After 11 years of discussions and growing traffic jams, it proved that San Franciscans were willing to pay up to \$27 annually in added taxes to abandon their cars for high-speed transport. It was, as one official said, "a momentous decision."

### Freeways for the experts, but tracks for the people

Thus Alameda, Contra Costa, and San Francisco counties will get 75 miles of track (16 miles of it underground) and 30 stations by 1975. A \$133 million, 4-mile tube under San Francisco Bay will be financed (with some poetic justice) from surplus tolls on the Oakland Bay Bridge.

While the system cannot be considered complete until San Mateo and Marin Counties join in, the city has at least a start on balanced transportation—the kind of mixture that even Los Angeles now seems to want.

Opponents of rapid transit were quick to point out that San

Francisco is a special case. It has always opposed freeways for reasons of space and esthetics—as the truncated Embarcadero symbolizes.

In Detroit, an October 26-27 symposium on "The Dynamics of Urban Transportation" presented the pros and cons of rail transit and freeway systems. Sponsored by the Automobile Manufacturers Association, it also ran the gamut of related topics: pedestrian movement, parking economics, trucking requirements, urban land uses.

Although it is popularly held that cities are being strangled by cars, said American Automobile Association Director Kermit B. Rykken, rail rapid transit has serious drawbacks too. Among them: 1) most cities do not have the necessary population concentrations to justify subways or elevated trains; 2) most trips are not destined downtown but all over the city; 3) rapid transit will not clear up traffic congestion because at least half of the cars cluttered downtown are there only because they must pass through.

Baltimore Developer James W. Rouse added a fourth point. Rail transit, he said, encourages "intensively developed communities along main corridors, with highest possible concentration of metropolitan functions at the urban core." Future city dwellers, Rouse felt, would prefer planned new communities which are "shaped, defined, protected, and served by a system of expressways over which people can easily flow to their multiple destinations."

Other speakers plugged transit. They showed that only subways could: 1) efficiently move peak-hour traffic in large cities; 2) minimize the tremendous cost of land acquisition and relocation

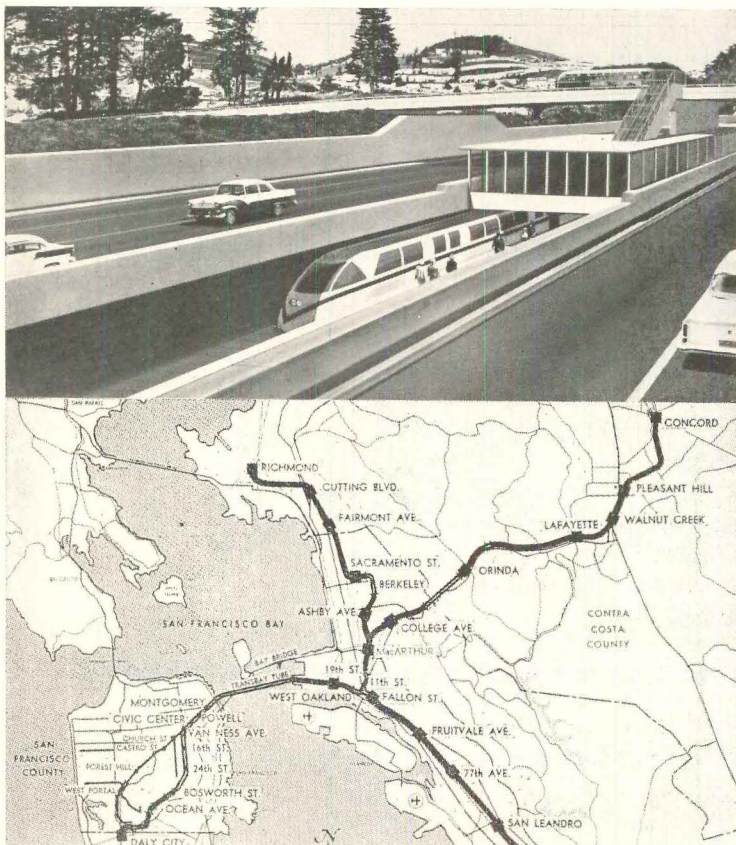
which surface systems require; 3) relieve traffic congestion throughout the city. But no one was quite sure how to get drivers out of their cars and into subways that are presently noisy, overcrowded, and dirty.

The consensus of the AMA symposium, not surprisingly, was a preference for mass transit by freeway vehicles—especially express buses.

A concurring opinion was published in Washington, D.C., early last month. It bases its recommendations on the "fact" that most cities will continue to decentralize because transportation and communications advances make one site as good as another. Faced with this situation, residents will choose low-density regions; industries, open space. Economists John R. Meyer of Harvard and John F. Kain of the Air Force Academy, with Transportation Engineer Martin Wohl of MIT, wrote the report for the forthcoming White House Conference on Civilian Technology. They conclude that since the trend towards decentralization is "irreversible," rail transit systems (except perhaps those in New York) should not be expanded—although Boston, Chicago, and Philadelphia are contemplating just that — nor should new systems be constructed elsewhere. Subways, they feel, cannot effectively serve a diffuse area. Instead, they recommend freeway systems with express and feeder buses. Besides, they add, rail transit unit costs per passenger mile are significantly higher than comparative costs for buses—or fully loaded passenger cars (whenever that happens).

For Washington itself, however, a strong boost for rail transit came when the National Capital Transportation Agency released its area-wide transit plan last

*Bay Area transit route (map) will use some freeways, connect with buses*



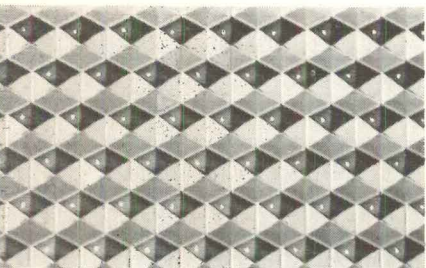




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continued from page 5

month. It bases its recommendations on the premise that downtown Washington, because of the federal government, will not disperse to the suburbs. Noting the capital's booming growth (although it is only the ninth largest city it now has the fourth-largest downtown daytime population in the country), the NCTA proposes a balanced system which emphasizes subways and surface rail lines rather than buses and freeways.

NCTA justifies this heavy use of electric railways for reasons of cost: they are cheaper to build than freeways in densely populated areas and involve fewer relocation problems; and they save the city's tax base and preserve some scenery as well. Two subway routes serving 14 stations with 19 miles of track are planned, plus eight surface lines extending to 51 suburban stations with 65 miles of track. Another 50 miles of new freeways would complement the 205 miles already built

or approved, and accommodate expanded express and feeder bus operations. Total cost of the system is estimated at \$1.62 billion, and construction would be programmed over a ten-year period starting in 1964.

Will people ride transit rather than drive? The NCTA replies that the proposed system will be faster, cheaper, and as comfortable as passenger cars—a "dramatic improvement over present transportation" in all respects. Implementation of the recommendations, which augment the Year 2,000 Plan, will have to await approval by the Administration, Congress, local governments and other agencies. Under these circumstances, changes in the rail-oriented NCTA proposal are most probable.

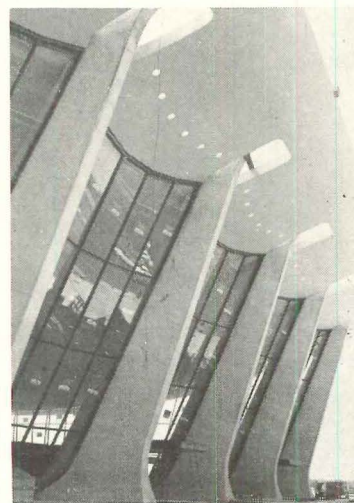
But with San Francisco leading the way, and such other cities as Atlanta, New Orleans, and Milwaukee taking a fresh look at rails, transit at last seemed to be getting its day in court.

from the FHA and VA and rely on private mortgage-insurance firms, banks, and S&Ls. Chances are, however, that the present Order will be extended to cover FDIC and FSLIC member institutions before very long.

Another hedge to the discrimination ban lies in its difficulty to enforce. The federal government will count on moral persuasion. If offenses do occur, it will cancel commitments and follow that with court action as a last resort.



PHOTOS: COURTESY FAA



#### EVEN THE GLASS "WORKS" HERE

The late Eero Saarinen's immense Dulles International Airport (above) was formally opened by a host of dignitaries last month. It lived up to its previous adjectives: "mighty," "majestic," "vigorous," and all the others. For those who had qualified their praise with wonderings on how the glass walls would "work," their fears were laid to rest: the curved, black-lined windows not only accented the great slanting pillars (left), but also complemented the almost Oriental style of the control tower (above). Moreover, seen from the outside, Dulles' windows, unlike those at MIT's Kresge Auditorium, are transparent (left).

### ANTIBIAS ORDER ISSUED AT LONG LAST

President Kennedy, after waiting almost two years to fulfill a campaign promise, signed an Executive Order banning discrimination in federally aided housing programs last month and created a new Cabinet-level Committee on Equal Opportunity in Housing to coordinate federal agencies carrying out this policy.

The edict was greeted with varying emotions: To most economists and home buyers, it presages a period of adjustment. To Negroes and other minorities, it represents a first and modest step towards a free housing market (modest, because federally insured lending institutions are not covered by the present order). And for some home builders and Southern Congressmen, it means trouble of one sort or another and, perhaps, retaliation in the form of less housing legislation in Congress.

Earlier in the fall, the President had indicated that he would sign the antibias edict before the November elections. This step, however, was postponed primarily

to avoid charges of political maneuvering. An equally important consideration was the possibility of a resulting slow-down in the housing industry—one of the few bright performers in the "iffy" economy of past months.

Last summer, the National Association of Home Builders had released the results of a survey showing that its members (most of whom build in suburbs) saw a drop of 50 per cent in building volume if the order took effect (FORUM, Aug. '62). In 1962, however, only about 25 per cent of the 1.4 million dwelling units started were FHA or VA—and most were single-family houses.

In answering a reporter's question, the President said: "There may be some adverse reaction, but I think we will be able to proceed in the development of our housing industry."

One reason for his optimism lies in the fact that the edict does not cover housing loans from federally insured savings and loans associations and banks. Thus developers can turn away

### PLAZA TALE: WHO'S AFRAID OF THE GAO?

The late Congressman Clem Miller (D., Calif.) excoriated the General Accounting Office last August for their "judgment by adding machine" approach to esthetic topics. He was referring to an outstanding public housing project in Marin City (FORUM, June '62). The GAO, he said, "decides things on an accounting basis and proceeds to project evaluations of an entirely different order from these figures."

A similar case came up last month. It concerned the 200,000-square-foot public plaza which is to unify the buildings of Manhattan's Lincoln Center for the Performing Arts.

The Urban Renewal Adminis-

tration has approved a grant-in-aid credit of \$2.7 million for the plaza. Justification of this 100 per cent financing comes from Section 110 (d) of the 1949 Housing Act. "Aha!" cried the GAO: Section 110(d) states that the specific area aided must receive the total benefit of any public improvement in it—and this plaza clearly will serve the entire city of New York "as well as tourists visiting the city." Thus, the credit should be reconsidered by URA Commissioner William Slayton.

In supporting its key argument, the GAO carefully examined other aspects of the case. The plaza, it huffed and puffed, should not receive federal funds on other counts: it is not necessary for ac-

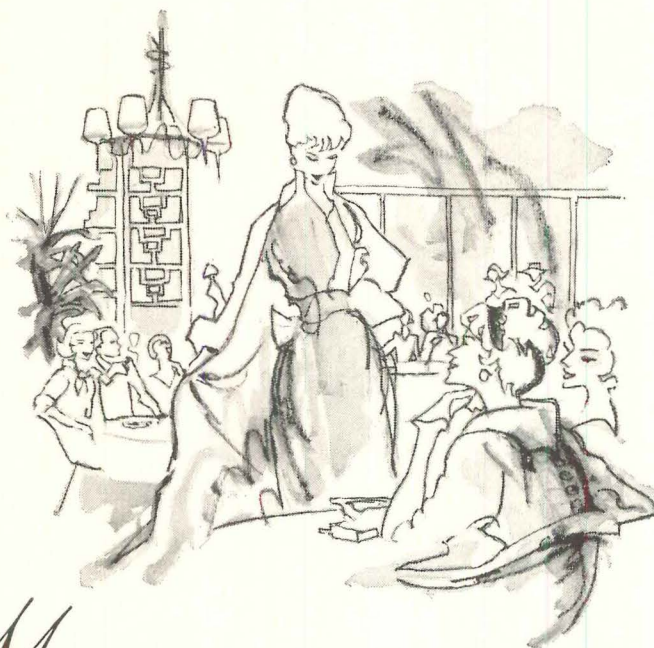
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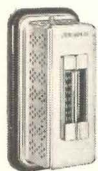


Owner-Developer: Webb & Knapp (Canada) Limited  
Architects and Planners: I. M. Pei & Associates  
Associate Architects: Affleck-Desbarats-Dimakopoulos-Lebensold-Michaud-Sise  
Mechanical Engineers: Jas. Keith & Associates  
Mechanical Consultants: Cosentini Associates  
General Contractor: The Foundation Company of Canada Limited  
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cess to the building and it does not have to be a public area to receive police protection. Finally, since the buildings of Lincoln Center are privately financed, the usual procedure is for the redeveloper to construct his streets and access ways with his own funds.

Commissioner Slayton was unmoved. "There is no reason," he said, "for determining . . . [that] the plaza is a facility which serves

the entire community rather than the project and is therefore ineligible for credit." URA is concerned with the plaza, he added, to ensure that the Center be "an expression of coherent civic design"—i.e., be properly planned and developed in the public interest.

Upshot of the case: the project will not be changed unless Congress rules so. This is regarded as most unlikely.



**ART AT HANOVER: A NEW CULTURAL CENTER WITH AN IVY LOOK**

Dartmouth College in Hanover, N.H., opened its new center for the performing and creative arts last month, thus gaining at least temporary superiority in cultural matters in the upper Connecticut River Valley. Designed by Architect Wallace Harrison, the modern, \$7.5 million Hopkins Center (above) still manages to blend in with other campus architecture such as the Baker Library (reflected here in

the glass). The high vaulted glass façade provides an effective setting for drama, music, painting, and other arts, and also houses a post office, snack bar, and student lounge. The formal opening of Hopkins touched off a ten-day display of the arts which concluded, aptly enough, with the dedication of Dartmouth's second major new structure—Pier Luigi Nervi's huge vaulted fieldhouse.

## ALCOA BUYS INTO BIG RENEWAL PROJECTS

The Aluminum Company of America moved into urban real estate development in a big way last month with the announcement of the purchase of: 1) five large urban renewal projects from Zeckendorf Property Corp., a subsidiary of William Zeckendorf's Webb & Knapp, and 2) a 25 per cent participation in the \$40 million James Whitcomb Riley Center in Indianapolis, Ind.

The deal with Zeckendorf was the more important of the two, for it not only commits Alcoa to a long-term interest in urban renewal, but also makes it clear that, despite last winter's injection of new funds from British

sources, Webb & Knapp is still consolidating and reshuffling its varied properties.

The five holdings include Manhattan's Lincoln Towers, Park West Village, and Kips Bay Plaza; Philadelphia's Society Hill, and Washington Plaza in Pittsburgh.

These big projects, which either are finished or soon will be, become the principal assets of a new corporation, Alcoa Urban Development Corp., of which Alcoa itself owns 90 per cent, ZPC the other 10 per cent. In return for its interest, Alcoa pays \$10 million in cash to ZPC, and agrees to pay back \$25.6 million of in-

come from the properties over an 11-year period, at 6 per cent interest. Thus, for about \$35 million, Alcoa gets a 90 per cent interest in properties costing around \$200 million to build.

Alcoa also has an option, exercisable from Oct. 1970 to Sept. 1972, to swap its AUD holdings for a one-third interest in ZPC. Alcoa currently holds a 5 per cent interest in ZPC.

Alcoa's new purchases place it squarely among the largest urban renewal developers in the nation (although the Riley project is not federally aided). The aluminum maker also holds a two-thirds interest in the mammoth Century City project in Los Angeles, owns one half of Zeckendorf's UN Plaza apartment-office project in New York, a share of Pittsburgh's Allegheny Center project, and a major portion (with developer Louis Perini) of the \$85 million Golden Gateway development in San Francisco. Alcoa also has a small equity position in Lewis Kitchen's Mansion House project in St. Louis, Mo.

## ELECTION RESULTS

Beyond choosing candidates who, on a national scale, tend to favor Administration programs like the mass transit bill (if not civil-rights measures), voters on November 6 also judged projects important to their communities.

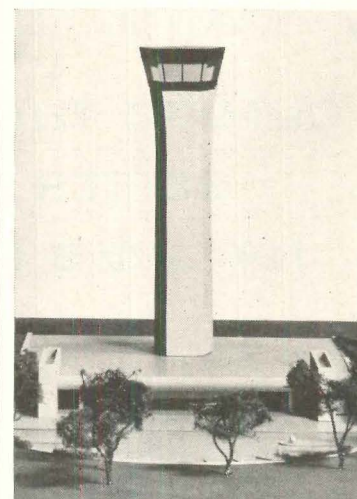
Houston, for example, did not get a zoning ordinance. In a vote to test public opinion, the proposal was turned down for the fifth time—thus leaving this the only U.S. city of over 100,000 people without zoning. Elsewhere, schemes for metropolitan city-county governments were overwhelmingly defeated in Memphis, Tenn., and St. Louis, Mo.

Among the \$2 billion worth of bond issues offered, Californians passed the two largest: \$792 million for a Bay Area transit system (see page 5) and \$270 million for higher-education facilities, 80 per cent of which will be used for construction. Cincinnati voters approved \$25.7 million in downtown improvement bonds. A \$25 million issue was passed by

New Yorkers for acquisition and improvement of parks.

Two open-space preservation proposals in California were turned down. One would have permitted lower tax assessments on productive farm land in urban regions; the other was to provide tax benefits for historic or scenic areas (FORUM, Oct. '62).

On the question of reapportionment recently high-lighted by the Tennessee Case (FORUM, May '62) voters expressed surprisingly mixed reactions. Oklahoma and Colorado approved plans to increase urban representation in their legislative houses, and West Virginians and Oregonians turned down measures to expand current rural domination. But in Florida and Mississippi, reapportionment recommendations failed at the polls, and Nebraska and California voters rejected plans to give urbanites more of a say.



**FAA'S NEW AIR TRAFFIC TOWER**

About seven months ago, the eight-man Design Advisory Committee of the Federal Aviation Agency selected Architect I. M. Pei to design a prototype air traffic control tower. At that time Pei was charged with developing a distinctive, freestanding tower which would provide better space for operating radar and radio equipment, greater visibility from the cab, and improved environment for personnel. Last month, Pei produced his design (model photo above), and it was accepted by FAA Administrator N. E. Halaby. It includes provisions for expansion of the base structure, and savings due to a plan for prefabricating the pentagon-shaped tower cabs.

COURTESY FAA



## WINNERS ANNOUNCED IN U.C. COMPETITION

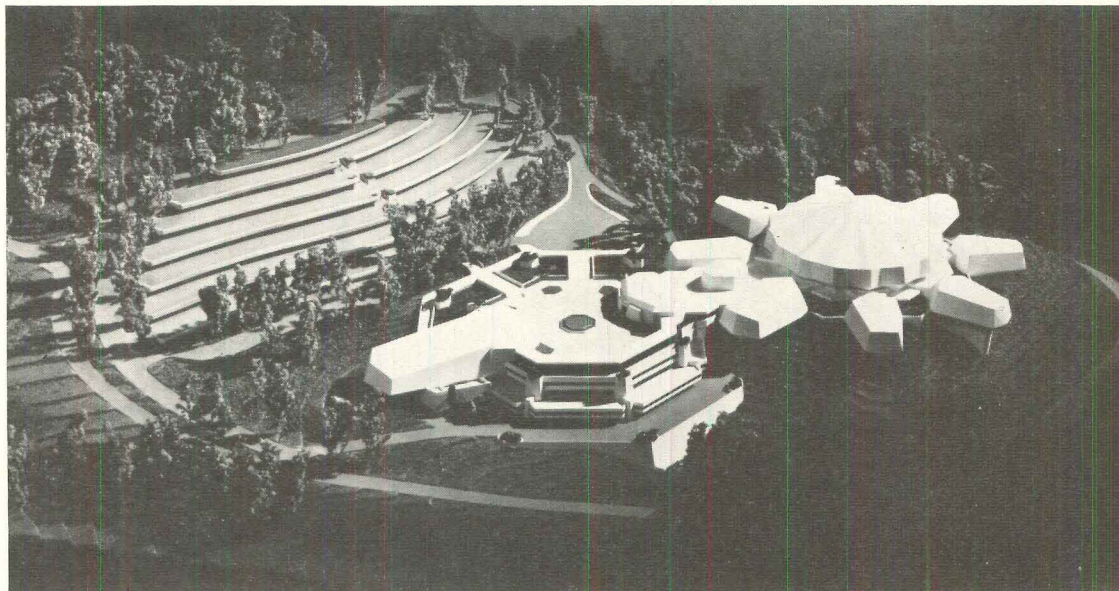
One of the best-kept secrets in the architectural world was made public last month. The winner of the closed competition for the Lawrence Memorial Hall of Science, on the University of California's Berkeley campus, is the San Francisco firm of Anshen & Allen. Other invited competitors in an impressive field were Vernon DeMars of Berkeley, Louis I. Kahn of Philadelphia, Nathaniel Owings of Skidmore, Owings & Merrill, San Francisco, and Kevin Roche of Eero Saarinen & Associates, Hamden, Conn.

Their problem was the design of a hilltop complex for science education, costing somewhat over \$4 million for the first stage. In the words of one of the five jury members, the hall, named after Nobel Prize Winner Ernest O. Lawrence, had to be "worthy of the great name it will bear. It must serve its unique purposes effectively, and it must be in harmony with the beauty of the superb site it will occupy in the hills."

As could be expected, the architects' solutions (right) were striking. Louis Kahn's rough, sculptured earth forms provided perhaps the strongest statement; by moving into the ground, Kahn gave architectural recognition to the problems of science in a nuclear age. Like Kahn, Anshen & Allen avoided the essentially circular solutions of the other competitors. Their star-shaped complex both suited the site and solved circulation problems. Especially notable was the winners' integration of the two-stage building requirement.

Anshen & Allen's use of scientific forms for the complex, which will harmonize with the rolling ridges of the site and echo the shape of the Lawrence Radiation Labs, also impressed the jury (Architects Pietro Belluschi, Richard M. Bennett, Clarence W. W. Mayhew, and University Regents Edwin Pauley and Donald H. McLaughlin).

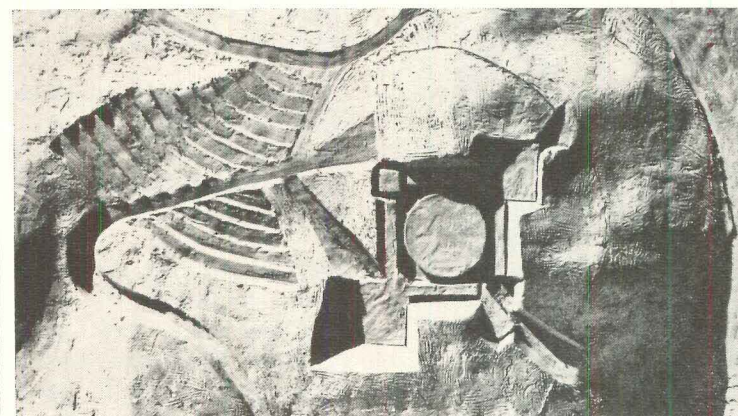
Construction of the first phase (center section in Anshen design) will probably start late next year. Financing is entirely from private sources.



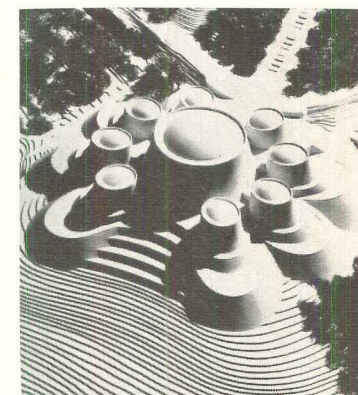
*Anshen & Allen's scheme (above) groups eight display halls around a huge "Space Hall." The key-shaped building contains an auditorium and gallery. Between these two are a science information center and memorial hall.*



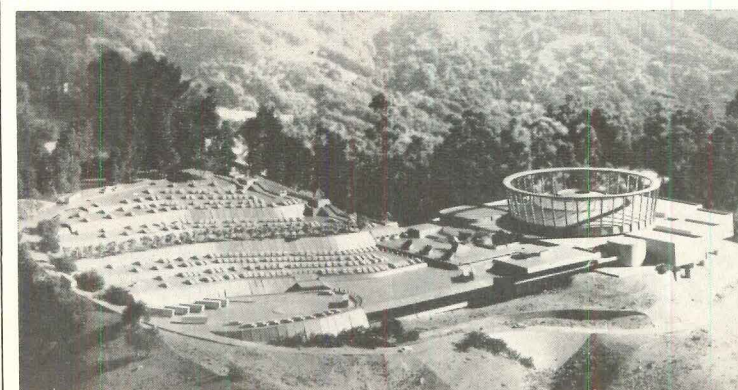
*Owings's submission (left) creates a delicate, sculptured composition of cylindrical shapes.*



*Submission by Louis Kahn (left) actually digs into the hillside to achieve a powerful series of earthworks very different from the other entries.*



*Above: Kevin Roche's entry uses truncated cones of concrete and steel to create an atmosphere of scientific formality.*



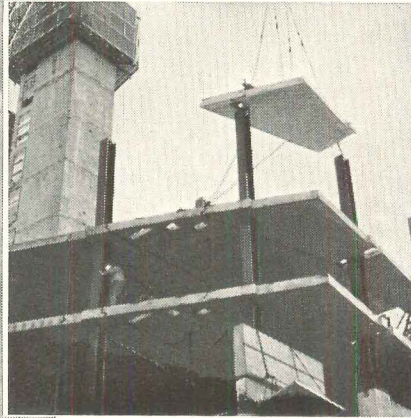
*Left: Vernon DeMars' handling of the difficult parking problem was considered especially successful.*

*continued on page 13*





This rendering shows the architectural beauty of the new Capp Towers Motor Hotel soon to be completed in downtown Minneapolis. Exterior curtain walls are precast concrete panels with embedded rustic stone and marble chips.



Here, a corner beam is raised for positioning on the column. Note the shiplap bearing detail between precast beams and prestressed slabs. Other precast and prestressed structural units required elsewhere in this project include columns, beams and double tees for a 7-level parking garage which is tied into the hotel.

*Owner:* Martin Capp, Minneapolis, Minn.

*Architect:* Ackerberg & Cooperman, A.I.A., Minneapolis, Minn.

*Contractor:* Robin Hood Construction Co., Minneapolis, Minn.

*Structural Engineer:* Ross H. Bryan, Consulting Engineer, Nashville, Tenn.

*Prestressed & Precast Concrete:* Prestressed Concrete Inc., St. Paul, Minn.

**BETTER THAN  
ONE FLOOR A WEEK—**

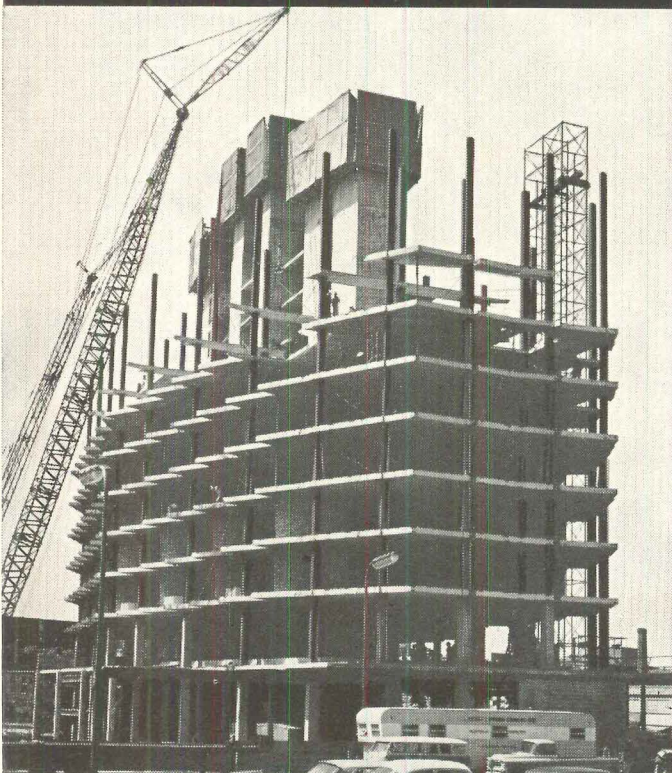
## with Unusual System of Precast Concrete Beams and Prestressed Slabs

The new 15-story Capp Towers Motor Hotel in Minneapolis utilizes a unique floor system of precast flat beams combined with lightweight prestressed floor slabs. The beams cast with structural collars were simply positioned and welded to the columns. With both types of units having shiplap edges, the slabs fit flush into the spaces between the beams.

Construction efficiency was impressive by anybody's standard. Placing of the precast and prestressed units progressed at better than one 86' x 222' floor per week. Each floor served immediately as a working platform for all trades and construction personnel.

The beams and slabs as well as all other precast units supplied by Prestressed Concrete Inc. for this building were made with Lehigh Early Strength Cement. Consistent use of this cement in their manufacturing operation helps them attain maximum production efficiency through early removal of units and quick re-use of forms.

This is another example of the way in which Lehigh Early Strength Cement can contribute to modern concrete construction. Lehigh Portland Cement Company, Allentown, Pa.



Near the top can be seen a row of precast beams in place. Note the absence of formwork or scaffolding as the structure rises. Complete, the building will have over 200,000 square feet of floor beams and slabs. Units are 8" thick. A 3" concrete topping, post-tensioned from end to end and side to side, ties the slabs to the service core shear walls. Bottom side of slabs was chemically treated to provide a roughened surface for direct application of plaster to ceiling.

**LEHIGH  
CEMENTS**



## People in the News

### QUOTE . . . UNQUOTE

"A freeway, properly planned and designed, can provide for the needs of all means of land transportation, including the pedestrian, in a setting which, in its own way, can have all the grandeur for twentieth-century America that the Champs Elysees had for nineteenth-century Paris.

Unfortunately, to a large degree our freeway planners have not made the most of their opportunities for good design."—*Knox Banner, Executive Director, National Capital Downtown Committee, Inc.*

"By actual measure, about one-third of all land in the Chicago region is devoted to transport, which gives some measure of the importance of transportation to the metropolitan way of life."—*Douglas Carroll, Director, Chicago Area Transportation Study.*

"It seems sheer folly to let railroads deteriorate while spending billions on new expressways. These ever-widening strips of concrete rift our urban communities and country areas asunder only to create traffic jams, air pollution, and street congestion.

Were more motor tolls used to rehabilitate rail travel, the chances of future exorbitant taxes for this purpose would be greatly lessened and the chances of having decent rail travel greatly improved."—*Goodhue Livingston, former member of the New York City Planning Commission.*

"Price reductions greater than present fares would be required on each of the various modes of public transportation to divert one-third or more of the commuters who said that auto was their best alternative."—*Dr. Leon N. Moses, Transportation Expert.*

"Grandiose schemes of rapid transit are on the drawing boards. Even more fantastic plans are in the nebulous stage. I will venture a prediction. Not during my lifetime or yours will any of these schemes come to fruition."—*Kermit B. Rykken, American Automobile Association.*



Tracy Augur

### MUSICAL CHAIRS AT URA

After selecting two important additions to his staff (FORUM, Oct., Nov. '62), URA Commissioner WILLIAM SLAYTON last month announced further changes designed to strengthen the agency's planning activities. Internationally known planner TRACY B. AUGUR was appointed to the post of Special Assistant to the Commissioner. His former position as Assistant Commissioner for Urban Planning and Community Development was filled by Economist FREDERICK O'R. HAYES, who had been the Assistant Commissioner for Program Planning. GORDON HOWARD, an urban land specialist from the D.C. Redevelopment Land Agency who left URA three years ago, returns to fill Hayes' old spot.

### IT COULD HAPPEN ANYWHERE

Architects everywhere could sympathize with SAYRE & KELLOGG of Denver, Colo., who learned the hard way that an architect's estimates of building cost can, indeed, be binding, if not accurate. The two were charged with negligence in the case of a restaurant building for Pizza Oven, Inc. wherein their estimated cost of \$60,000 fell just \$32,000 short of the actual figure.

In their defense, the architects stated that their client had made a number of additions to the original building, and that the final plans and specifications were not completed at the time of the preliminary estimate. The jury was unimpressed: it awarded Pizza Oven, Inc. \$21,489 in damages—and gave the architects outstanding fees of

only \$930 (of \$2,600 claimed in countersuit). Last month, Sayre & Kellogg presented motions to the District Judge, seeking to set aside the decision.

### NCPC PLANNER RESIGNS

To the surprise of few observers, WILLIAM E. FINLEY, director of the National Capital Planning Commission, resigned five weeks ago, effective November 26.

Despite Finley's widely acclaimed work on the city's basic development scheme, the "Year 2000 Plan" (FORUM, Dec. '61), it was no secret that Finley and Planning Commission Chairman ELIZABETH C. ROWE did not see eye to eye. One important point of difference was the question of the Georgetown water front: he wanted to declare it a blighted area (as it is) ready for urban renewal; Mrs. Rowe did not.

Other arguments stemmed from treatment of the Watergate Towne project on the Potomac, and freeway planning for downtown. Beyond this clash of personalities,



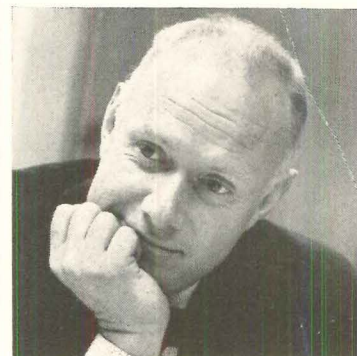
William Finley

which reached a peak last summer, Finley was allegedly disturbed by bickerings regarding his role within the Commission.

He resigned to accept the position of Vice President of the James W. Rouse Co. and Community Research and Development, Inc. Said Developer Rouse: "We are very pleased that Bill Finley will soon join our staff; he is one of the most effective city planners in the U.S." Meanwhile, in Washington, the NCPC was looking for another outstanding planner to replace him.

### CANADIAN WATCHDOG

Not many days after Dean CHARLES COLBERT of Columbia University's school of architecture had urged U.S. newsmen to act as "watchdogs of the commonwealth" (FORUM, Nov. '62), Canadian Columnist PIERRE BERTON showed his American colleagues how to bark most effectively. At issue was a plan for a \$60 million private



Pierre Berton

International Trade Center in Toronto. Berton had his suspicions about the project, which was to be built on prime public land near Lake Ontario. For example, the general public knew that the developers were Levy Industries, Ltd., and that the Toronto Harbor Commissioners had approved the plan, but no one knew specifically how the green-belt land was going to be used. Berton, an old pro at exposés, seized on Levy's glossy brochure depicting the transportation, hotel, and commercial complex. He found that city zoning laws had been ignored, and proved that the architectural renderings in the brochure had been "lifted with minor changes from published editorial or advertising material in U.S. and European architectural journals." Levy Industries and others dismissed Berton's exposé as "unrealistic." This prompted Berton to ask who was being realistic—certainly not Levy Industries, which had published pictures completely unrelated to the project, and surely not the Harbor Commissioners, who had approved the plan without any detailed information. The upshot: a few days later Levy Industries quietly withdrew their plans, thus leaving the land open a while longer in redevelopment-excited Toronto.

continued on page 16



# \$300

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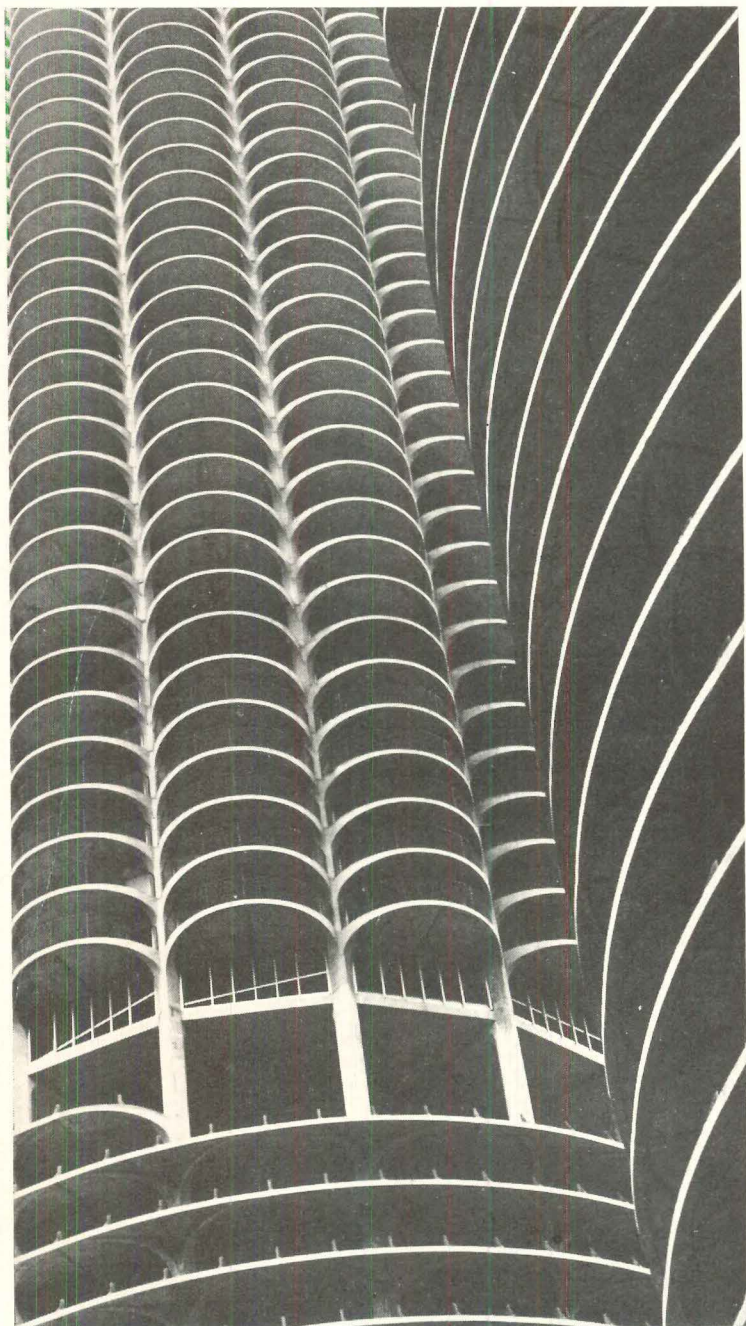
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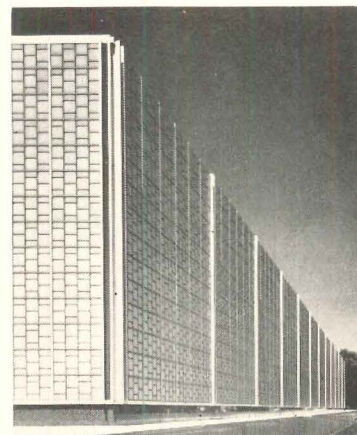




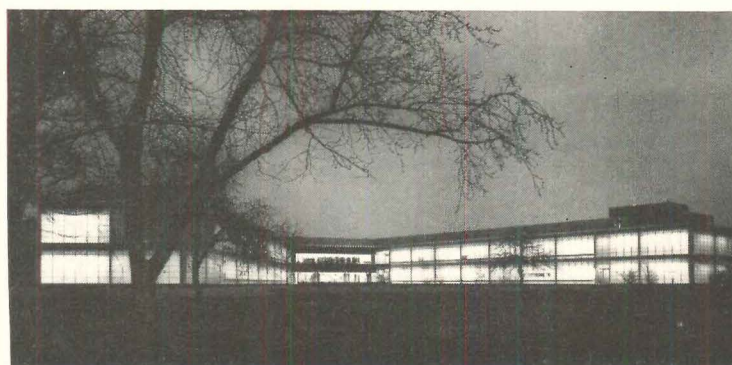




**LUMINOUS LABORATORY.** The curtain wall enclosing the new research building for Miles Laboratories in Elkhart, Ind., consists of 10,000 translucent glass blocks, 2 inches thick, held in aluminum frames. The wall, which cost \$5 per square foot installed, brings diffused natural light to the open areas behind it. The two-story building is V-shaped, with labs in the long arms, entrance and library at the apex. Architects-engineers: A. M. Kinney Associates. Contractor: The Sollitt Construction Co.



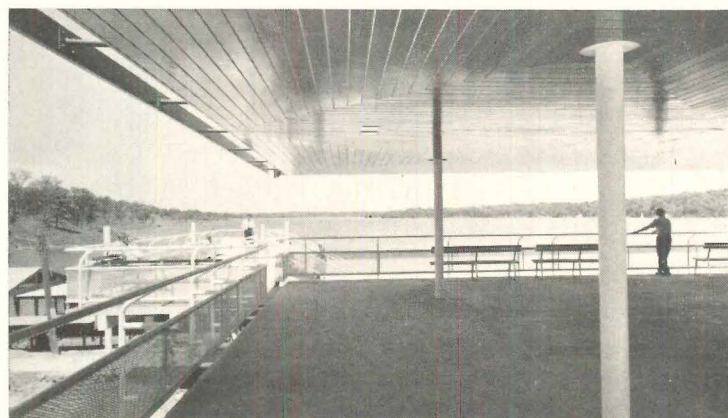
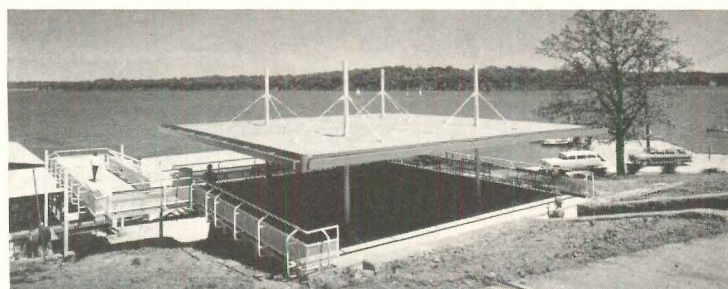
WALBRIDGE &amp; BELG, INC.



DONA LEE JOHNSON

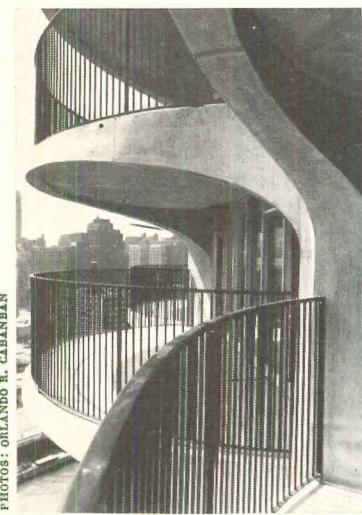
**PAVILION ON MASTS.** The light, open structure shown below was designed as an observation deck overlooking the sailboats on Lake Jacomo, Mo. The plain deck is sheltered by a broad roof, guyed to four mastlike columns which echo the rigging of the boats. The

underside of the roof is finished in varnished cedar. Cost of the project (which includes a pedestrian overpass from the parking lot, and storage beneath the deck) was \$32,000. Architects: Elpidio Rocha & Associates. Contractor: Schweiger Construction Co.



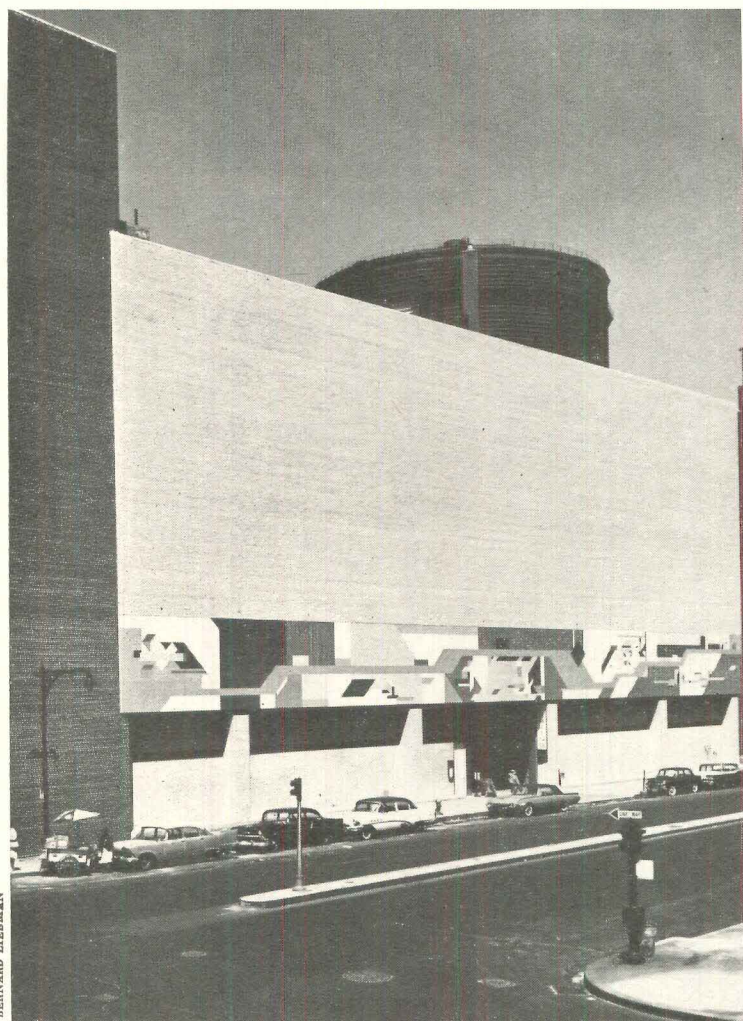
PHOTOS: L. D. JONES

**SCALLOPED APARTMENTS.** It is a commonplace that most big buildings look best before their powerful frames are hidden behind exterior walls. But the twin towers of Chicago's Marina City stand a good chance of looking as handsome finished as they do in the dramatic construction shot above, because the real enclosing wall of glass is set well behind a second visual wall consisting of scalloped balcony edges and railings (left). The 60-story towers contain 896 living units and are built of reinforced concrete (FORUM, May '62). Architect: Bertrand Goldberg. Contractor: James McHugh Construction Co.



PHOTOS: ORLANDO R. CABANBAN





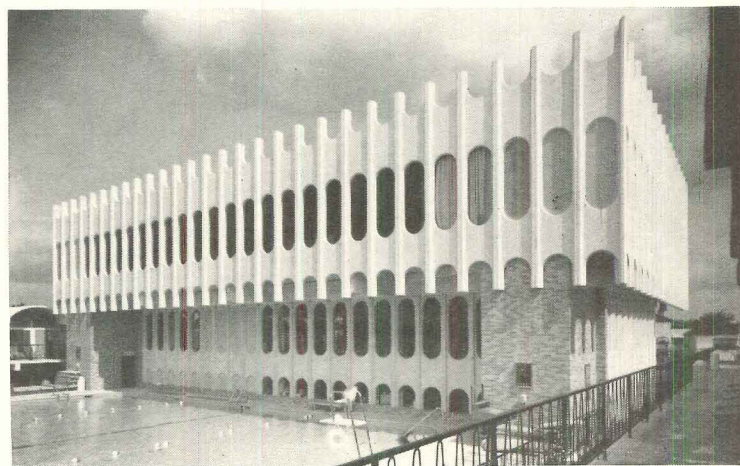
BERNARD LIEBMAN

**MANHATTAN MURAL.** Along one whole side of the new United Parcel Service building is an abstract mural, 180 feet long and 13 feet high. Artist Max Spivak's design cost \$25,000, uses standard 1-inch glazed tiles in strong colors to express packages on a conveyor belt. Architect: David & Earl J. Levy. General contractor: John W. Ryan.

**WOODLAND WONDERLAND.** The swirling, baroque "Grand Tapestry" of flowers and fountains (below), which looks a little like an oversize Viennese birthday cake, is part of Sterling Forest Gardens. The 125-acre recreational park adjoins Robert Dowling's Sterling Forest development, northwest of New York City. Landscape architect: Ara Ignatius.



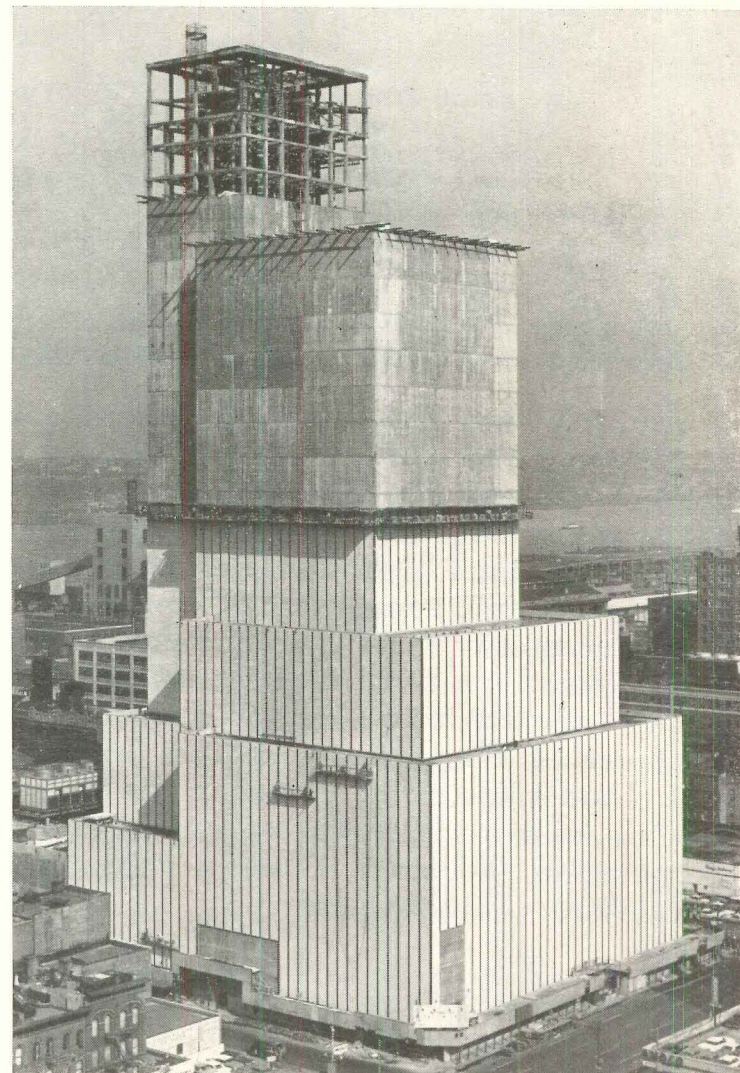
DICK HOCHMAN



DEN SCHALL

**BROOKLYN SWIM CLUB.** Palm trees in Brooklyn give the Palm Shores Club (above) its name. The building is equally bizarre: around it runs a fluted band of precast sections, their oval eyes sometimes open, sometimes blinded by exposed aggregate filler panels. Architect: R. I. Pezenik. Contractor: R. Berfond.

**WINDOWLESS SKYSCRAPER.** The foot-thick concrete walls of the 21-story building below—handsomer without veneer—protect 3,000 operators from fallout, says the New York Telephone Co., and cut cooling and heating costs in half. Architects: Voorhees, Walker, Smith, Smith & Haines. Contractor: Walsh Constr. Co.

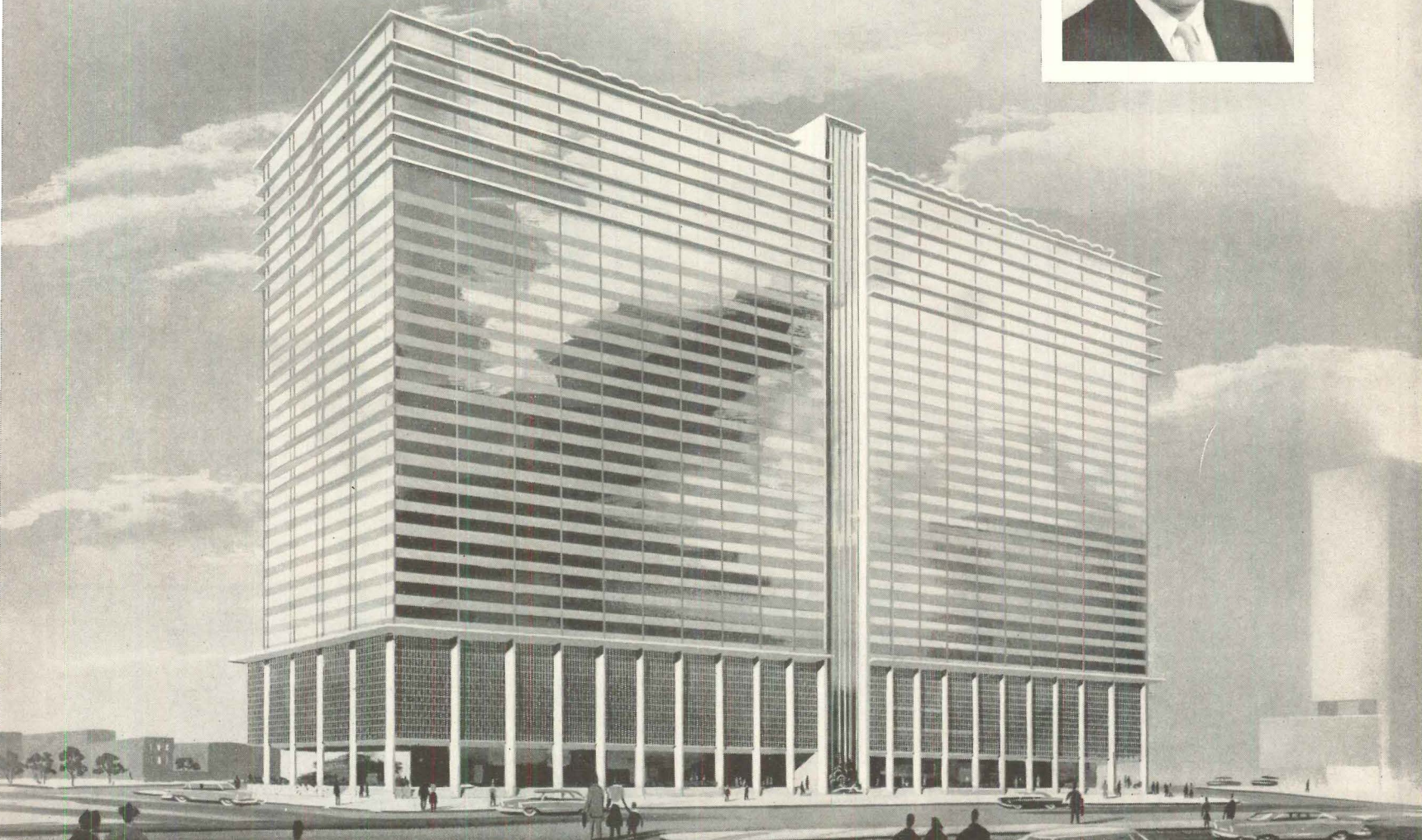


ANDY BARBIZA



**"We selected Haughton Elevators for the new Penn Towers . . . to provide speed with comfort"**

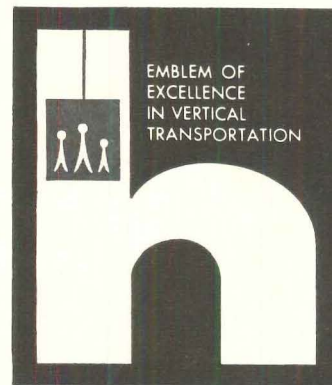
**. . . says Mr. Sylvester J. Lowery, President, Penn Towers, Inc.**



Penn Towers, Philadelphia, Pa., Samuel J. Oshiver Associates, Architects and Engineers, Gilbane Building Company, General Contractors

Combining the features of a luxurious apartment hotel and modern office building, the new Penn Towers in Philadelphia will have the most advanced system of electronically-controlled elevators, keyed to the age of automation. ■ Eight Haughton Operatorless Elevators will transport passengers with uncanny speed and comfort along the glass-enclosed vertical highways that bisect the front of this striking new building. ■ An automatic electronic computer will constantly receive and analyze data pertaining to amount and character of traffic, and make adjustments to match traffic needs exactly. ■ Such is the magic of Haughton Elevonics\* . . . key to new standards in elevator performance. ■ Incorporate the advantages of Haughton Elevators in your plans. ■ Contact your Haughton sales office (listed in the yellow pages), see Sweet's File 24a/Ha, or write: Haughton Elevator Company, Div. of Toledo Scale Corporation, Toledo 9, Ohio. ■ Passenger and Freight Elevators, Escalators, Dumbwaiters.

\* *Haughton's advanced program in systems research and engineering, with specific emphasis on the creative application of electronic devices and instrumentation for betterment of systems design and performance. Registered in U. S. Patent Office.*





## U.S. FAIR ARCHITECTURE (CONT.)

Forum: On reading the October issue I was surprised to find that Mr. Henry Scharer of the Department of Commerce had written you that your editorial "U.S. architecture and the 1964 fair" (Sept. '62) was "quite interesting." I am assured that this was a routine acknowledgement on receiving a copy of your editorial.

I also find it difficult to understand how your writer could criticize a design he had not seen, a design which at the time had not been fully developed, nor decided upon, despite the writer's "fact" that the design was "frozen." In actual fact, as of this writing, the design of the building is still being developed.

Of a more serious nature are the implications regarding the manner of Mr. Luckman's appointment. The obviously best way to have selected a design for the Federal Pavilion is exactly as you suggested: an open architectural competition. Unfortunately, as was also true of Brussels and Seattle, time did not permit. The long delay in the appropriation of funds further complicated the problem. In an effort to speed the program, the same procedures were used in the selection of Mr. Luckman as in the selection of Mr. Stone and Mr. Yamasaki as the architects for the pavilions at Brussels and Seattle.

I am sure that when the plans for the pavilion are unveiled our confidence in Mr. Luckman will be fully justified.

NORMAN K. WINSTON

Washington, D.C.

Commissioner, New York World's Fair

## BACKWARD CULTURE

Forum: Reading about the government's attempt to bust culture out all over ("News," Oct. '62) brings to mind the offer of America's greatest architect, Frank Lloyd Wright, to donate his services for a "National Cultural Center."

Considering the architect who was selected, and the appearance of his model, I believe we have not advanced, but have taken another step in the regression of our culture.

MICHAEL P. JOHNSON  
Brookfield, Wisc.

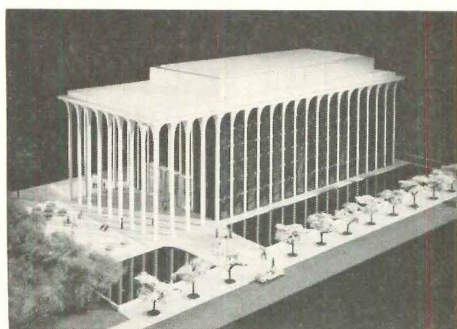
## CONCRETE

Forum: The September issue on concrete in the hands of various masters is a great and exciting architectural experience. Your continuing explorations of new facets of architecture each month makes the FORUM what its name implies.

HARRIS ARMSTRONG  
Architect

## BACK TO THE TEMPLE

Forum: May I suggest that you overlooked a significant consideration in your preview of Yamasaki's "Temple for Insurance" (Sept. '62). Thomas Jefferson would have been



quicker than you in recognizing the plan of his favorite structure in Nîmes, le Maison Carré, built in 4 A.D. by the Romans. He would then have led you to his design of the Virginia State Capitol Building in Richmond, Va., built in 1785, then to the plan of Vignon's la Madeleine in Paris, built 1805-42.

P. B. CUTLER, Instructor  
Boston Architectural Center



## STRIKING RESEMBLANCE

Forum: I was surprised indeed to see the building captioned "B.A. Award Winner" (Sept. '62 "News").

If you will refer to FORUM, October, 1961 "Projects," you will find a striking resemblance to [our] building, which has been erected at Hollywood's famed corner at Sunset and Vine, even to the "four pairs of massive columns for exterior support."

I fully agree with the further comment: "sensible volume, simply and clearly expressed."

JOHN REX  
Los Angeles Honnold & Rex, Architects

■ Above: B.A. tower (left), L.A. tower (right)—ED.

## NEWSPAPER ARCHITECTURE

Forum: You are to be commended for your fine Editor's Note on the fight for good architecture by certain members of the press (Oct. '62).

It would be more complete if it included

Frederic Sherman, real estate editor of the *Miami Herald*. Mr. Sherman has single-handedly created a better community by his unwavering crusade against unsightly billboards and inequitable zoning.

NEIL SCHIFF, Pres.  
Miami Neil Schiff Construction Co.

Forum: The happy observation in FORUM that the press is at last facing up to its responsibility to criticize architecture is most timely. If anything, the situation may be even brighter than reported. Jon Longaker of the *Richmond Times-Dispatch*, Ruth Moore of the *Chicago Sun-Times*, and Ann Holmes of the *Houston Chronicle*, for instance, all come easily to mind.

Momentum of a similar kind is discernible in TV: CBS's tribute to Eero Saarinen, and the two-part series given to religious architecture by CBS's "Lamp Unto My Feet."

Now let us hope there is no weak link in this growing chain reaction, that better criticism will produce better architecture!

CRANSTON JONES, Senior Editor  
New York City TIME magazine

Forum: In your roster of competent critics you omitted Esther McCoy. She is no stranger to the field, but it is in her numerous contributions to the *Los Angeles Times* that she has done the most to promote good design in everything from chairs to cities.

CHRISTOPHER ADAMS  
Manhattan Beach, Calif.

## HOSPITALS

Forum: An excellent set of articles on hospitals (Oct. '62). This is a story that needed telling and you have done it in a superb way.

As a community hospital planner I was particularly pleased to read the Columbus success story. Mr. Delbert Pugh has rendered his community a service for which he will long be remembered.

KARL S. KLUICKA  
Chicago Hospital Planning Council for Metropolitan Chicago

Forum: Congratulations on a very complete article on a phase of architecture seldom exploited in our architectural press: site planning. The concept in "Michigan's Multi-levelled Urban Plan" is one of the key factors in successful architecture today. I regret that the article nowhere mentioned Mr. Johnson's professional byname—landscape architect. Unfortunately, the site planning capabilities of the landscape architect are still unknown to many in the architectural profession, and will remain so until the architectural press credits fully the accomplishments in that line.

CHARLES A. DE DEURWAERDER  
Asst. Prof. of Landscape Architecture  
Manhattan, Kans. Kansas State University

Forum: In Mr. Shoesmith's excellent article on medical-center planning (Oct. '62) the impression is conveyed that I have been the

continued on page 20



# BEAUTY and PERMANENCE

in Ellison Balanced Doors and Framing



80 John Street, New York City Architect. John A. Walquist

This exterior entrance in Stainless Steel was engineered, fabricated and installed by Ellison. The interior vestibule Ellison Balanced Doors are in Bronze.

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sole author of the plans and designs for the Detroit Medical Center.

As an official urban renewal project, major responsibility and credit for this project lies with the Mayor and the City Council, the director-secretary of the Detroit City Plan Commission, and the Detroit Housing Commission.

GERALD E. CRANE, *President*  
*Crane and Gorwic, Inc.*  
*Architect-Planners*

Detroit

■ Also, full credits for the University of Michigan Medical Center in the same issue include: Johnson, Johnson & Roy, landscape architects and site planners; and Glen Paulsen & Associates, consulting architects.

## RENEWAL SERIES

Forum: Congratulations on your recent series on urban renewal by David B. Carlson. We were particularly impressed with the articles on rehabilitation and design.

Keep up the good work!

Washington, D.C. DONALD F. BOZARTH  
*Assistant Director for Urban Renewal*  
*National Capital Planning Commission*

Forum: "In Renewal, Who Manages Urban Design?" (Sept. '62) is noteworthy.

We all know this country is in dire need of good urban designers. Ten years ago Miami University of Oxford, Ohio, pioneered a graduate program for architectural students. Since then, only two other planning schools have inaugurated similar programs. If we are to fill the gap and produce more urban designers, instead of turning out "land use" planners by the score, other schools must follow suit.

PATRICK A. ROY  
Evansville, Ind. *Regional Plan Commission*

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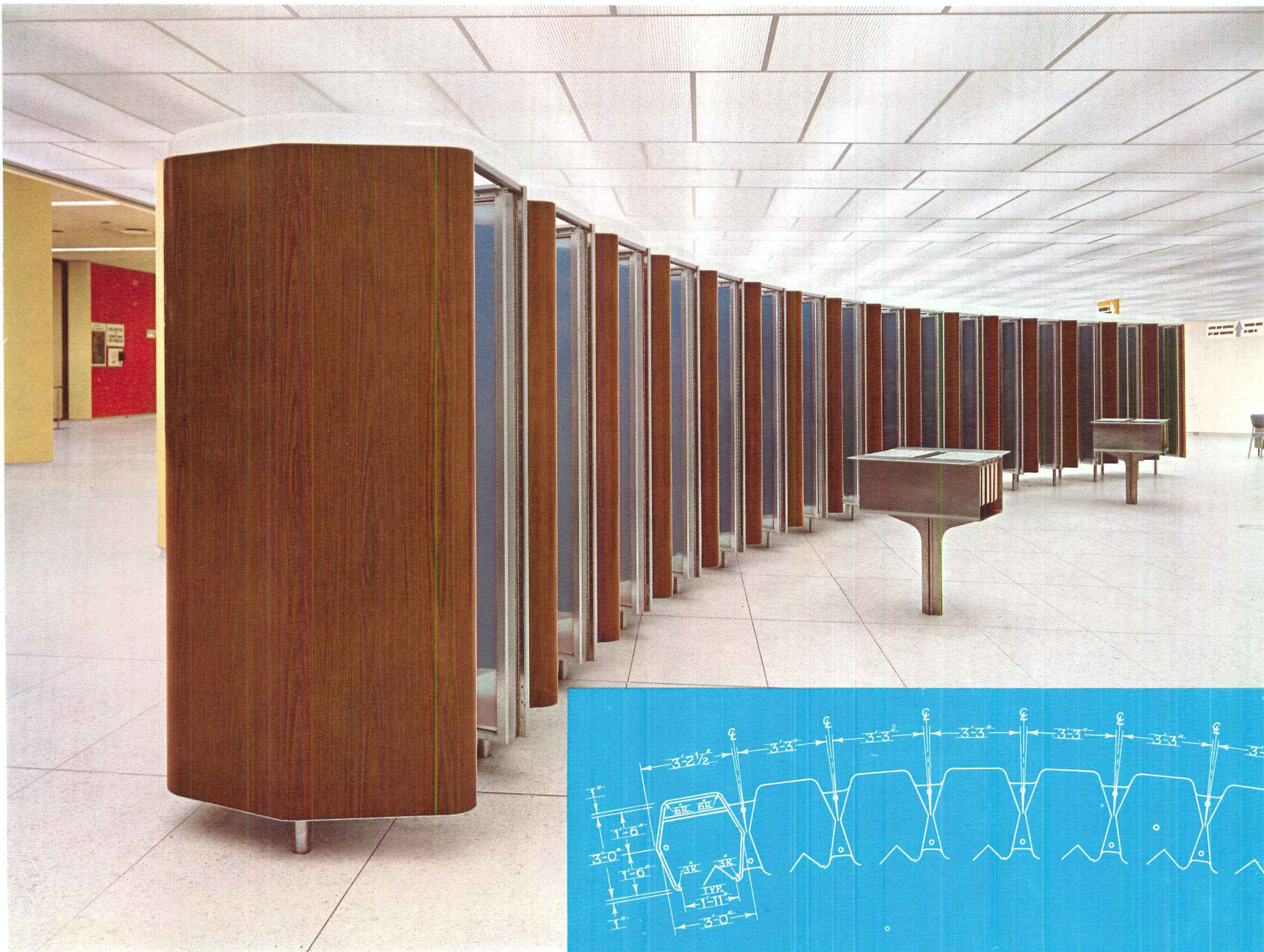
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## Los Angeles calling for Interior Designers' attention



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Low maintenance cost has been assured by the inherent ruggedness of Formica surfacing and applied by a design that eliminates corners. Special male and female press plates were used to postform satin finish, side matched Formica sheets of Malacca Teak.

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Write for form #934A, a catalog of commercial application ideas and technical information. You will also receive the Formica Red Book, a geographical and classified directory of Formica qualified commercial fabricators of laminated plastic.

Architects: Welton Becket and Associates, Charles Luckman Associates, Paul R. Williams; Booth fabrication and installation, Century Fixtures, Inc.

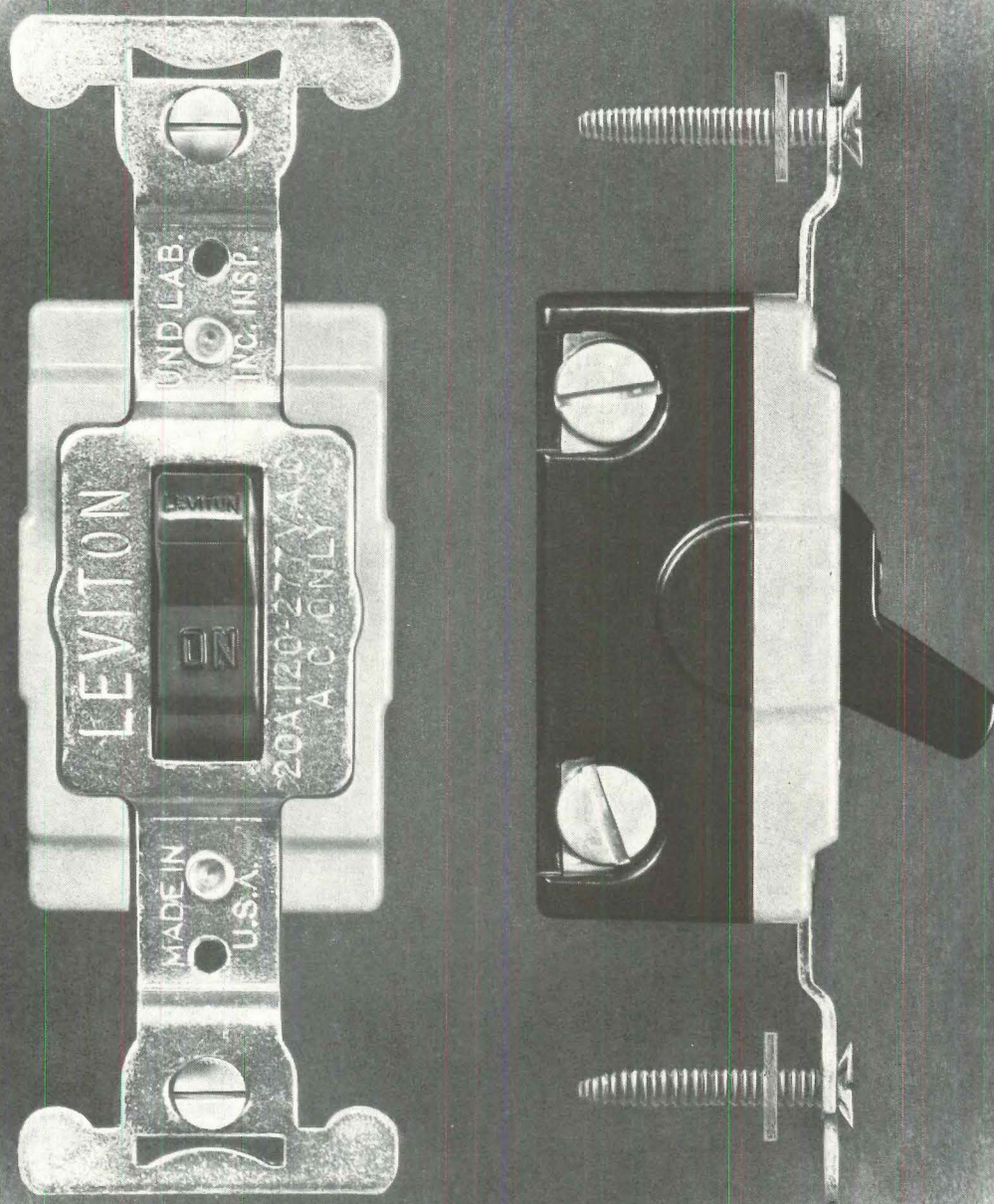


laminated plastic

Formica Corporation Dept. X-5, Cincinnati 32, Ohio subsidiary of







## SPECIFICATION: QUIET

This switch has been turned on and off over three million times! Still working—still quiet—it is dramatic proof of the reliability Leviton builds into every one of its switches. □ Few switches will ever be operated as often in actual use. The fact that ours can — and does — is your assurance of uncompromised quality and dependability. Testing of a Leviton device calls for the equivalent of twenty years of heavy usage under four types of loads, and seventeen tests to check reliability. Only after our products have exceeded these requirements are they permitted to meet yours. □ Whether it's "Specification: Quiet," or any other specification, chances are there's an economical, dependable Leviton device to meet it. Over twenty different Quiet Switches! Over 2,000 standard wiring devices! You'll find them all in our new 1962 catalog. Write for your copy today. Dept. AF-3, Leviton Manufacturing Company, Inc., Brooklyn 22, New York.





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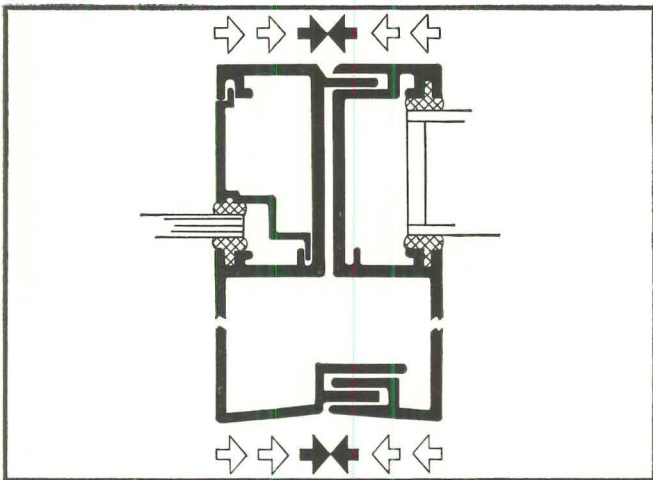




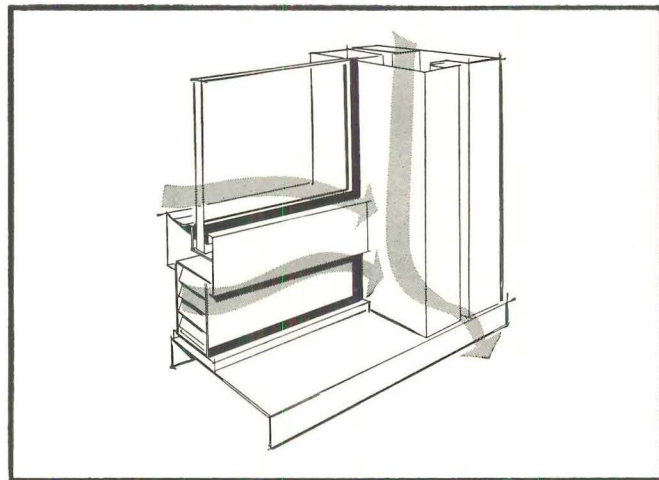
# The metal curtain wall with built-in performance bonds

## Kawneer Unit Wall

It is natural that you are seeking insurance of reliability, a "bonding of performance," so to speak, when you decide on the curtain wall for your building. After all, this is the key consideration for the appearance of the building, and how well it will perform its major function—keeping the weather out. Paper guarantees are meaningless without the engineering guarantee inherent in the wall system itself. Here are just some of engineering guarantees in Kawneer Unit Wall:



**Controls thermal movement differently:** Each unit has a half-mullion on each side, which fit into the half-mullions of the adjoining units. Thermal movement of each unit is separated (no buildup), and accommodated by the mullion halves moving toward and away from each other. Hence, metal joints within the units are not loosened by thermal stress, and stay tight against water infiltration.



**Two defenses against leakage:** Water is kept on the outside of the wall by a system of baffles and seals. This is defense number 1. We know, however, that some time, **some** water is going to find its way through the baffles and past the seals (it happens to practically every wall). So Kawneer Unit Wall systems have built-in internal drainage; defense number 2. Any seepage anywhere into the wall is drained to the mullions, down and flashed out.



**Erection is faster:** The whole wall is pre-fabricated, unit by unit in the factory. The units are simply joined together on the job. There is less on-site fabrication, less fiddling with pieces, less cutting to fit. Labor costs are kept low, installation goes much faster, and the building is enclosed and ready for occupancy much sooner.

**You can't draw a picture of experience:** In the six years that Kawneer has been making Unit Wall, we have been training our own men and our Wall System Contractors to apply the best solution, to install it faster, and to install it so it functions correctly. We invented Unit Wall; we know how to make it work, and it is working successfully on over 700 jobs throughout the country.

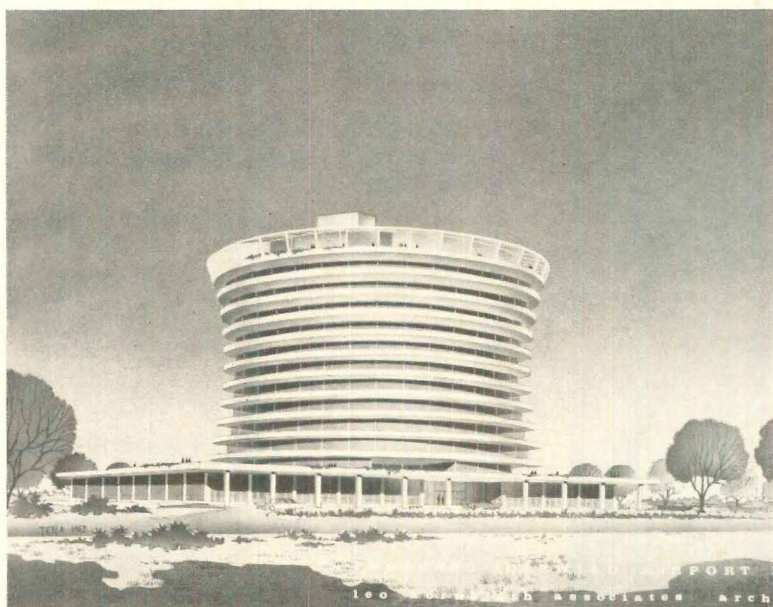
Kawneer makes high and low rise Unit Wall systems with a wide price range. For complete information, call your Kawneer representative, your Local Kawneer Wall Systems Contractor or write:

Kawneer Co., Niles, Michigan • Kawneer Co., Richmond, Calif. • Kawneer Co., Ltd., Toronto, Ontario, Canada

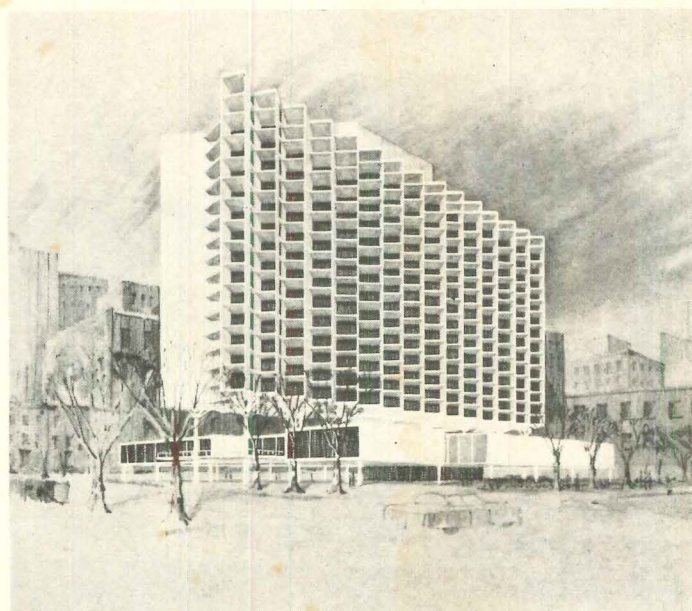




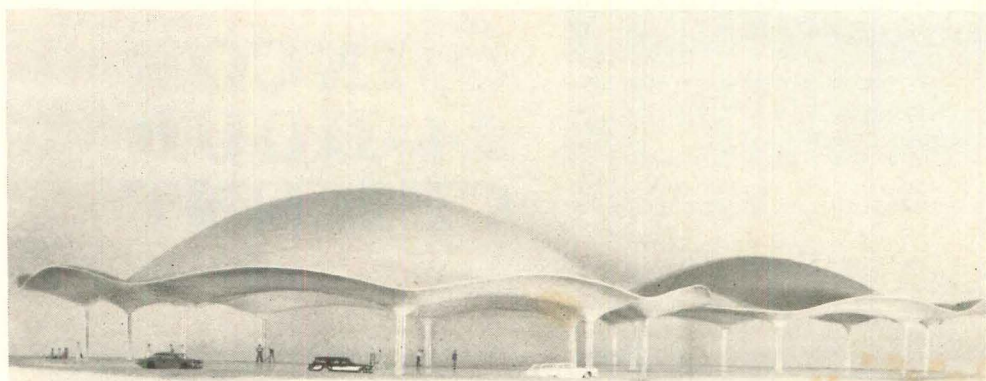
*Spirals, honeycombs for New York hotels (below)*  
*Sculptured walls in Louisville and St. Louis (page 51)*  
*Twin "Astral Towers" in Texas (page 53)*



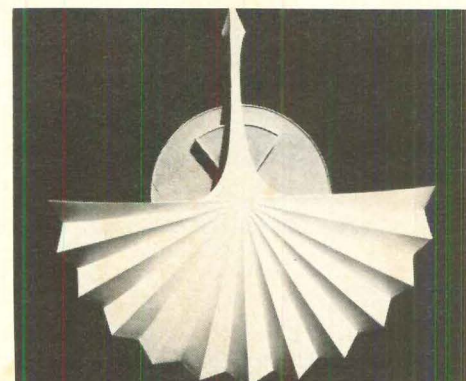
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**1. AIRPORT HOTEL.** Soon to add another distinctive shape to the design free-for-all confronting travelers at New York City's Idlewild Airport is this spiral hotel by Architect Leo Kornblath, proposed for a site close to the airport. In common with most of today's new hotels, this one will have no inside rooms: the core will be hollow, leaving all 420 rooms on the outside. A glass dome will roof the interior lobby inside the core.

**2. MANHATTAN INN.** A clear view of the East River and proximity

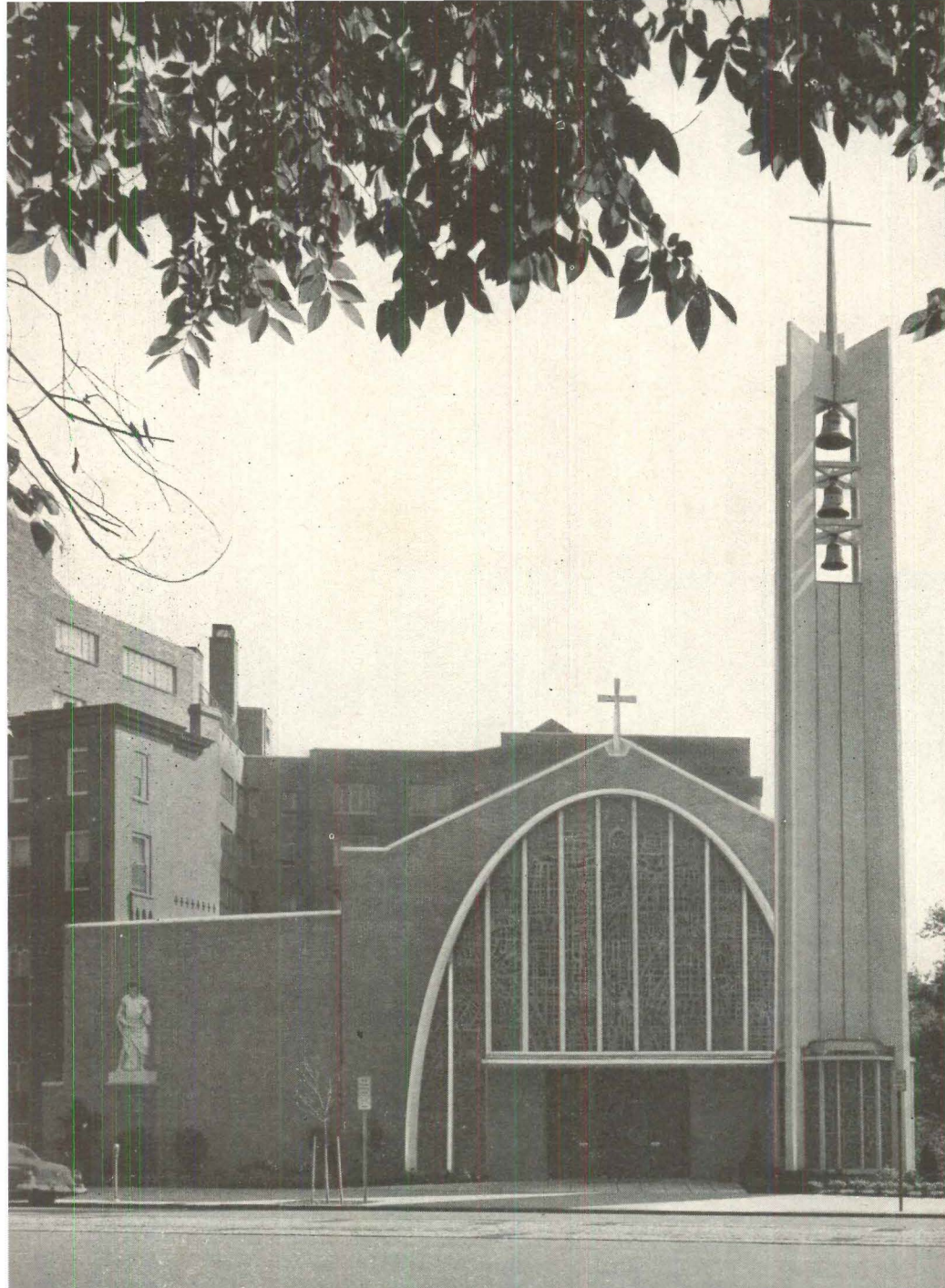
to the Franklin D. Roosevelt Drive prompted Developer Leonard Schneider to pick an East Harlem site for a new 405-room, \$3 million hotel, the Eastway Inn. The tower will be perpendicular to the river and the drive. Each guest unit—bedroom, bath, dressing room, and terrace—will slant 45 degrees from a central corridor in order to face the river view. The inn's public spaces will be in a broad platform built above open ground-level parking. Architects: Lawrence Werfel & Associates of Flushing, N.Y.

**3. SCALLOPED FIELDHOUSE.** Putting a structural membrane theory to the test, Structural Engineers Kolbjorn Saether & Associates will cast this scalloped, two-dome shell on top of gravel mounds covered with polystyrene boards, then lift it into place atop 17 columns. The domes will roof a school fieldhouse in Munster, Ind., sheltering a 210-foot track and ball field under one, an enclosed pool and dressing rooms under the other. The column-to-column span will be 60 feet. Architects: Bachman & Bertram.

**4. FOLDED AUDITORIUM.** A practitioner of *origami*, the Japanese art of paper folding, seems to have designed this delicate fan, but it is actually a thin-shell concrete roof over a high-school auditorium planned for Culver City, Calif. With this shape and construction, Architects Flewelling, Moody & Horn found the answer to a special space problem: a small wedge of land left from 60 acres set aside for school use. The fan will be cast rib by rib and hoisted into place, the ribs joining in a cap at the peak.

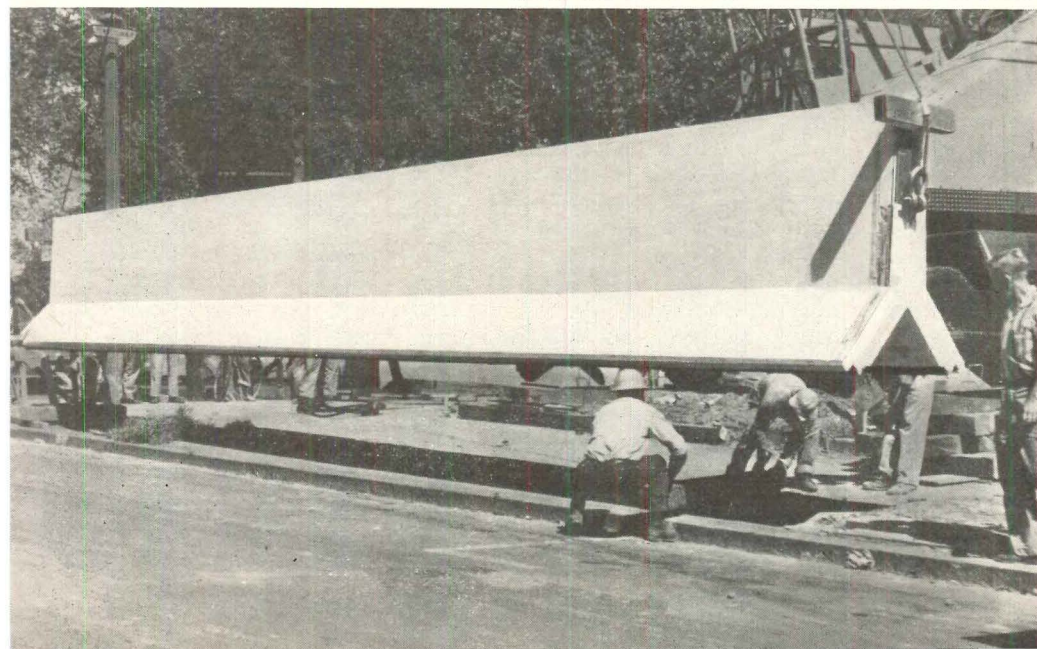
*continued on page 51*





ST. STEPHEN'S CHURCH, Washington, D. C. ■ Contractor: VICTOR R. BEAUCHAMP ASSOCIATES, Washington ■ Architects: JOHNSON AND BOUTIN, Washington ■ Precast Units Fabricated by: FORMIGLI CORPORATION, Philadelphia.

Center section is hoisted into place. The three pieces making up each leg were fastened together by cast-in weld plates, later covered with precast concrete filler strips. Legs were joined by means of cast-in Z-bars fastened together with a continuous welded plate and welded straps.



## TOWERING BEAUTY and EFFICIENCY from Precast Concrete and Incor<sup>®</sup>


One look at the results obtained with precast concrete for this 74-ft. 4½-in. bell tower and the adjacent arched window and you may well ask: "Why not precast concrete for my next job?"

**BEAUTY**—Strikingly apparent in the smooth, clean lines and surfaces of infinitely-adaptable concrete.

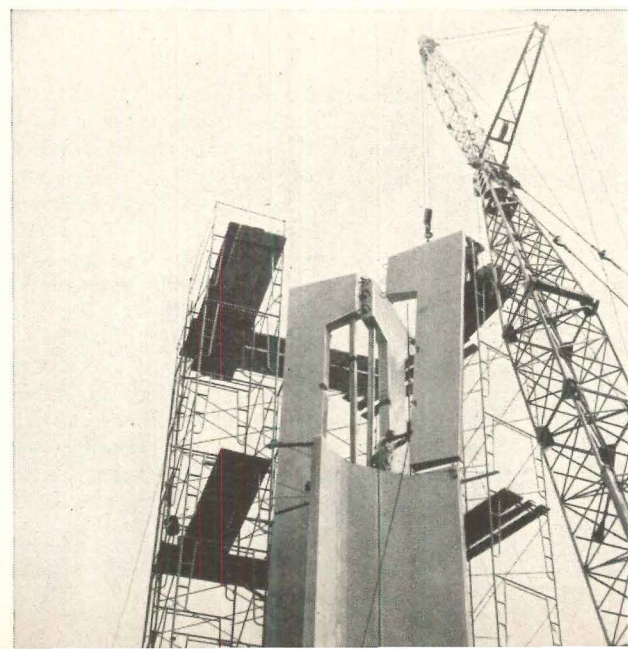
**SPEED OF ERECTION**—The tower is composed of only twelve precast sections, the arch of three—all easily handled by crane and assembled by simple methods. No expensive on-the-site delays. (Also precast were the ten window mullions supporting the arch, 5500 square feet of Spancrete floor, and 98 lineal feet of fascia beams.)

**SPEED OF FABRICATION**—No delays here, either. The precaster utilized "Incor," the nation's first high early strength portland cement, for all concrete requirements—made most efficient use of forms, time, money and manpower.

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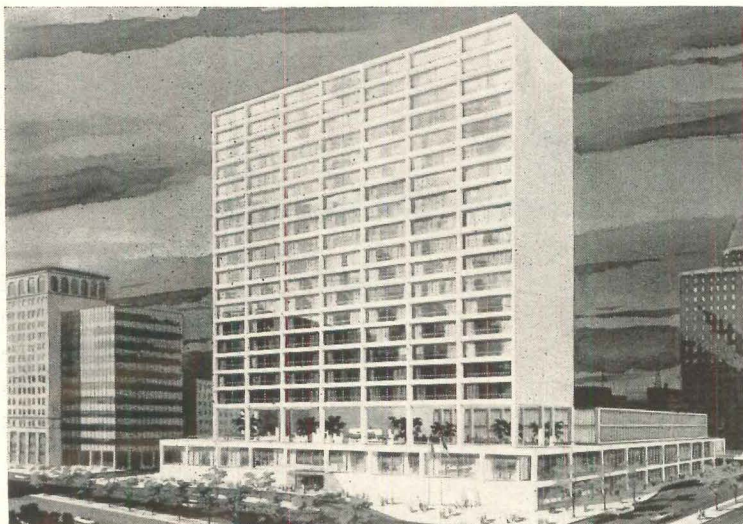
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Placing of top sections for bell chamber. The four legs were joined at the top by overlapping hairpins which extend from the legs into a poured-in-place joint.

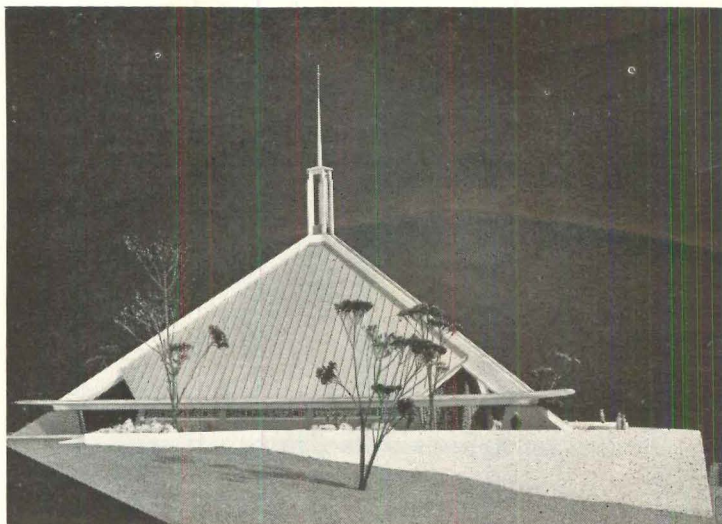




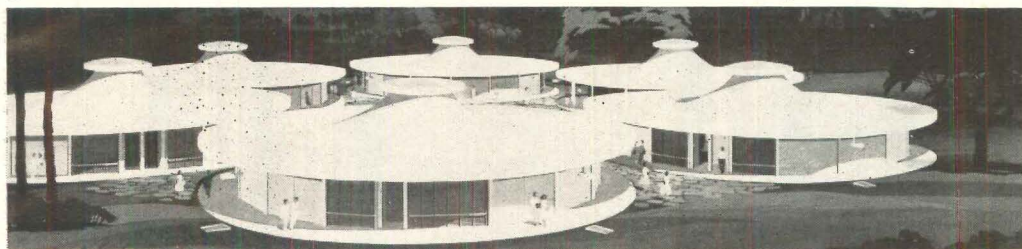
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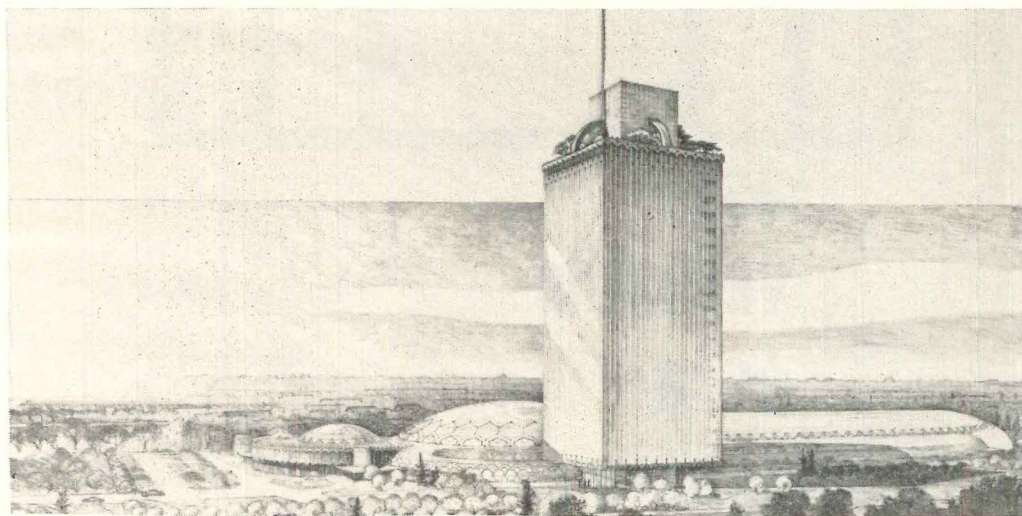
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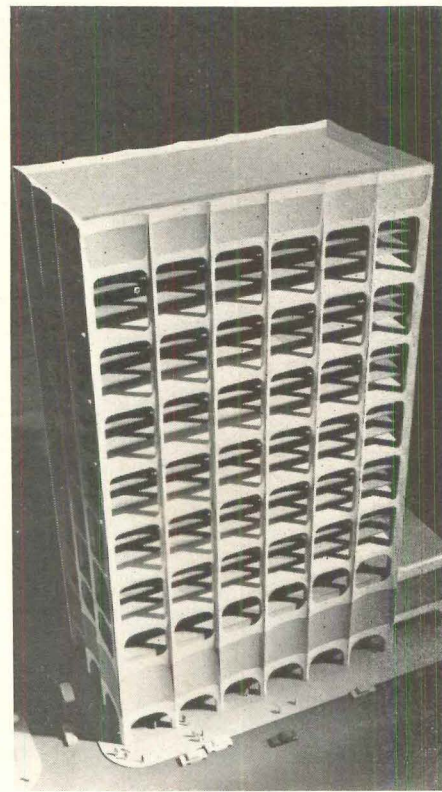
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**5. BALTIMORE HILTON.** Baltimore's first new downtown hotel in 35 years is to be a 530-room Hilton in Charles Center, a \$10 million venture in which Hilton will be joined by Metropolitan Structures, Inc. Similar in plan to other Hiltons by Architect William B. Tabler, it will have a 17-story tower atop public spaces.

**6. COLLEGE CHAPEL.** The chapel lies at the heart of the brand-new campus that Architect Vincent Kling planned for Concordia Lutheran Junior College outside Ann Arbor, Mich. It is a triangle

representing the Trinity and the three separate parts of the campus. The big roof will be a paired girder system of poured-in-place concrete supported by brick piers at the cutaway corners.

**7. CLASSROOMS IN PUERTO RICO.** These sombrero-shaped classrooms were designed by Architect Chester Nagel as prototypes for schools in Puerto Rico. Working with the Ford Foundation's Educational Facilities Laboratories and a number of educators, Nagel succeeded in getting the cost down to \$5.50 per square foot. The roof, cast in

pie-shaped sections, funnels natural ventilation through openings beneath the skylights.

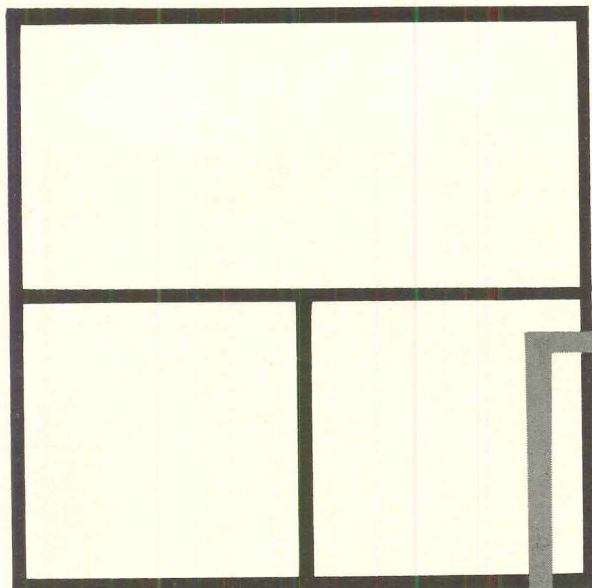
**8. KENTUCKY MEDICAL CENTER.** Though the dominant feature of the Kentuckiana Center of Education, Health and Research will be the tower, priority will go to construction of low circular wings for outpatient care, administration, and hospital rooms, all facing garden courts covered by translucent domes. The 20-story tower, to have some nursing floors as well as school and training quarters, will be sheathed in alu-

minum screening all around. Taliesin Associated Architects designed the center, part of the Kentuckiana Children's Chiropractic Center in Louisville.

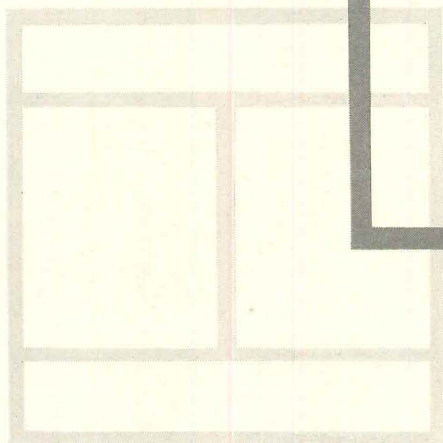
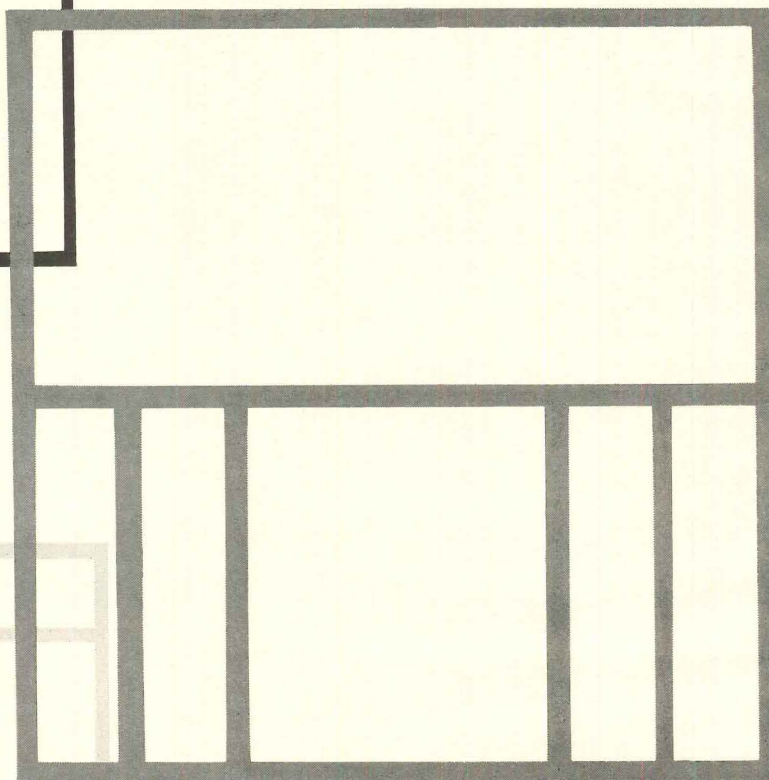
**9. ST. LOUIS OFFICES.** The hustling Siteman Organization, which is putting up a number of Missouri buildings and another in Texas, will start construction next spring on this \$10 million, 25-story speculative office building in downtown St. Louis. Architects Hellmuth, Obata & Kassabaum have grouped the floors in threes behind a sculptured exterior wall.

continued on page 53





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*More information, please.*

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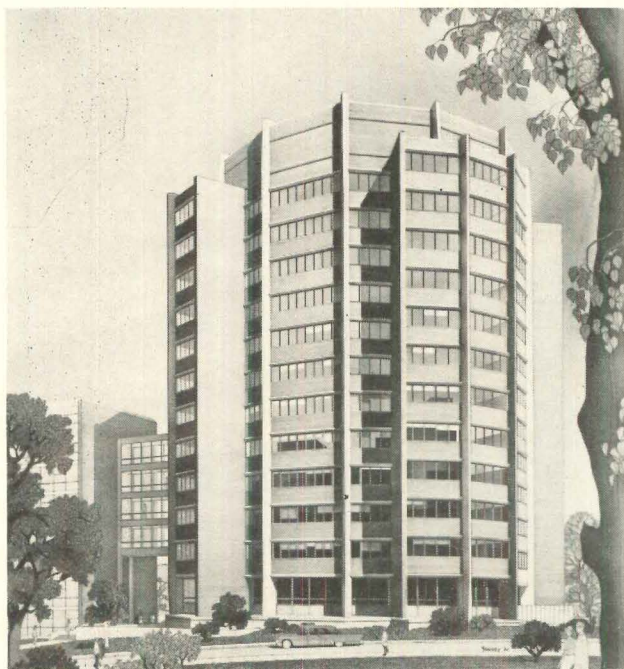
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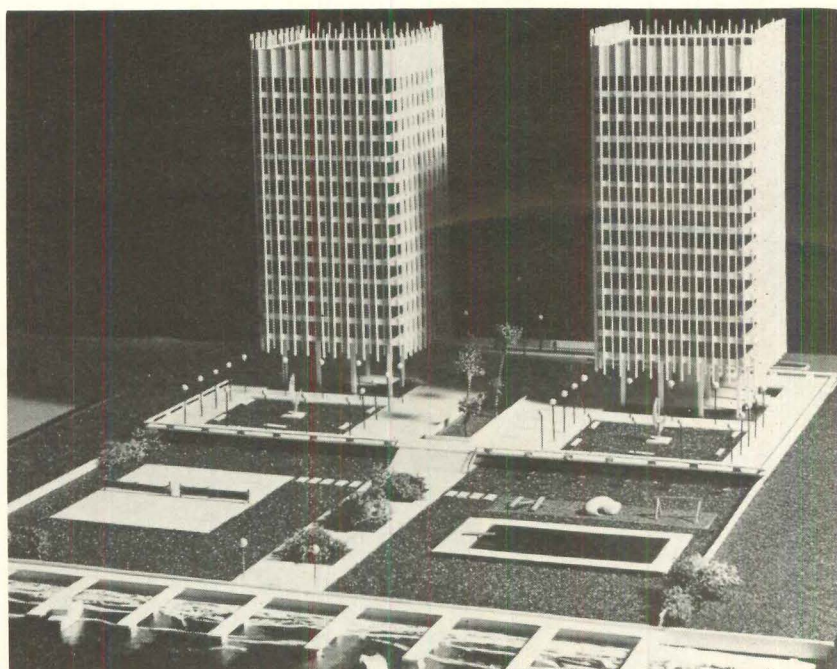
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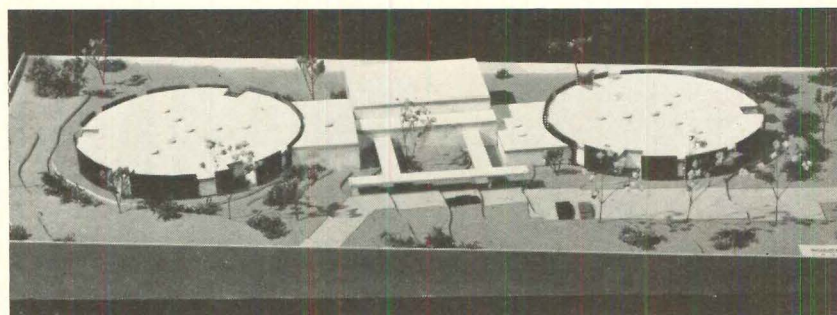
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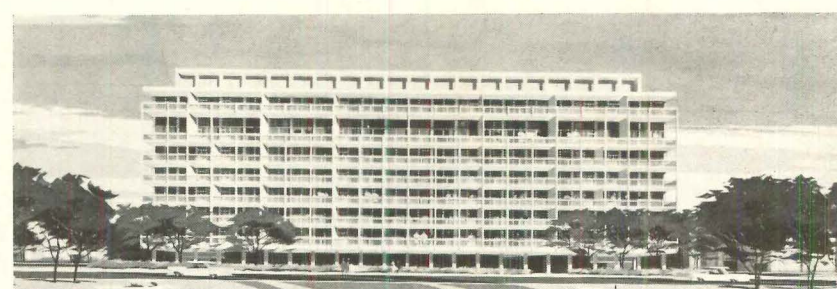
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**10. YESHIVA RESEARCH TOWER.**

Up in the Bronx, where a whole new medical center is gradually taking shape, Yeshiva University's College of Medicine will concentrate health-sciences research in this 12-sided, 12-story tower. Architects Kiesler & Bartos chose this unusual form because it seemed to offer the advantages of a radial plan, yet allowed straight windows and work areas on the outside band of laboratories.

**11. TEXAS SPACE TOWERS.** By the time NASA's Manned Spacecraft Center in Houston opens,

the surrounding countryside will be dotted with new structures, all of which seem duty bound to proclaim their awareness of the space program. This one, a \$6 million apartment project called "Astral Towers," is sponsored by a local syndicate headed by Charles MacRae. The twin towers, by Paul & Paul of Houston, will face terraces, a marina, and tennis courts.

**12. OIL COMPANY OFFICES.** This double project in Bartlesville, Okla., combines 19-story offices for the Phillips Petroleum Co. and a two-story pavilion for the First

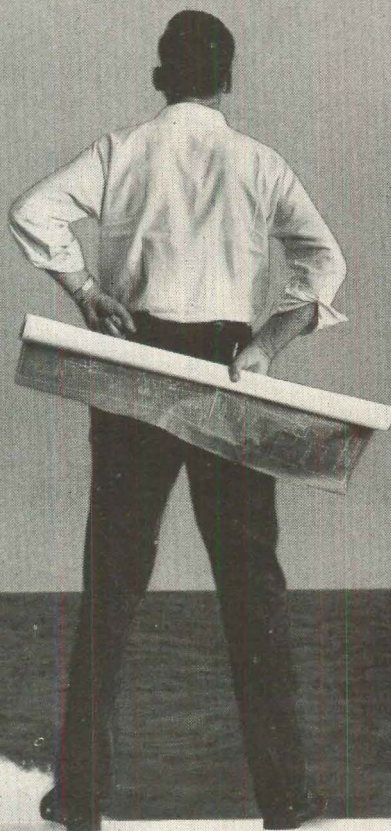
National Bank on one plot. For the Phillips offices, Welton Becket & Associates designed an exterior wall of big precast window frames, with glazing to be set in before being lifted into place. The frames will be of brown exposed aggregate; the glass will be amber. The bank's walls and roof will repeat the colors of its tall neighbor.

**13. WISCONSIN SCHOOL.** This small school, now under construction in Cedarburg, Wis., separates the elementary grades into two groups, keeping each in its own round schoolhouse. Between the

two are the school offices, a kitchen, a multipurpose room, and a library. Architects: Schutte, Phillips, Mochon of Milwaukee.

**14. CAMBRIDGE APARTMENTS.** These balconied apartments won the design competition conducted by the Cambridge (Mass.) Redevelopment Authority for 2 acres along the Charles River. The winning developer is the First Realty Co. of Boston, whose architects are Harris & Freeman, in association with Milton Schwartz & Associates. Cost: \$2.4 million for 65 split-level apartments. **END**





## CALIFORNIA ARCHITECT DECIDED TO take a new look at stainless

**KIRKEBY CENTER OF WESTWOOD**, a magnificent new 15-story executive office building, is the dream-image of architect Claude Beelman, A.I.A., and the managers of Kirkeby Realty, Inc. It blends two materials of lasting prestige, stainless steel and marble, into a spandrel pattern of vertical force.

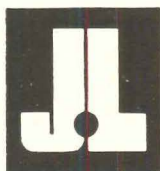
For Kirkeby Center, architect Beelman designed spandrel panels of Type 302 stainless with a No. 4 mill finish from Jones & Laughlin. They provide an outstanding example of the kind of job stainless steel is now doing for architecture, better and more economically than its traditionally competitive materials.

Improvements in the skills of working with this metal are creating

some of the new economies of stainless. Architects now create with the properties and abilities of stainless in mind. Fabricators have developed more efficient manufacturing techniques. Owners recognize positive values in final cost and maintenance. And cooperating with them all, J&L produces the grades, finishes and sizes suited to architectural use, with consistent quality that improves performance. It's time for you to take the same new look at stainless that architect Beelman did. Call on the J&L Architectural Department or your local Steel Service Center for more facts about stainless in architecture.

**Jones & Laughlin Steel Corporation**

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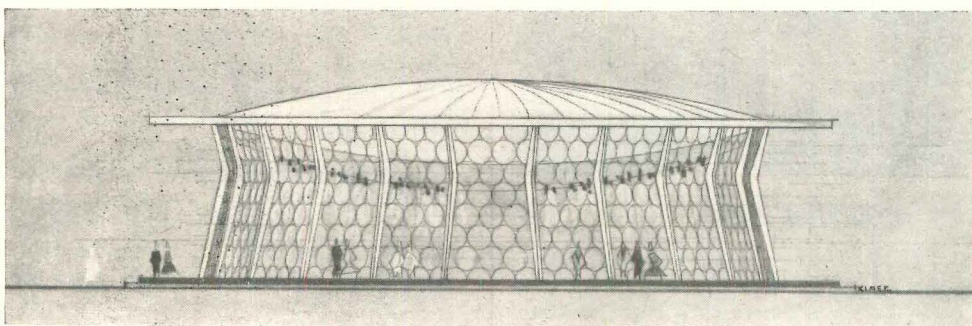
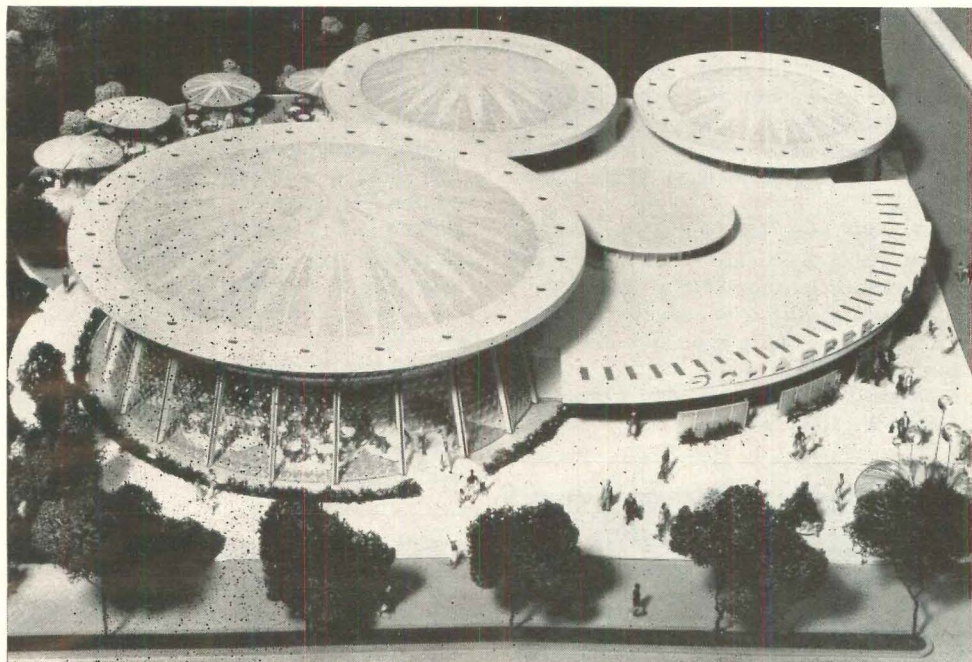


Window and Spandrel Contractor: Construction Metal Work Co.; Structural Engineers: Brandow and Johnson; General Contractor: McNeil Construction Co.



*Air-inflated roofs (below)*

*Inexpensive sandwich panel (page 57)*



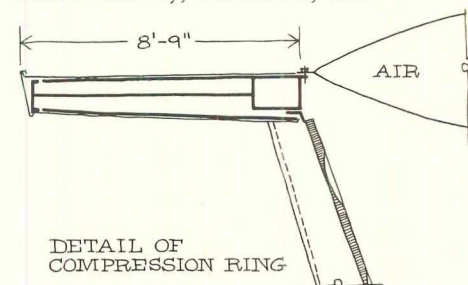
### BALLOON ROOF

The Schaefer Center at the 1964-5 New York World's Fair expects to draw attention—and business to its bar and restaurants—with this arresting pavilion: a cluster of three circles topped by balloon roofs, to be inflated through the Fair's two summers and the winter between.

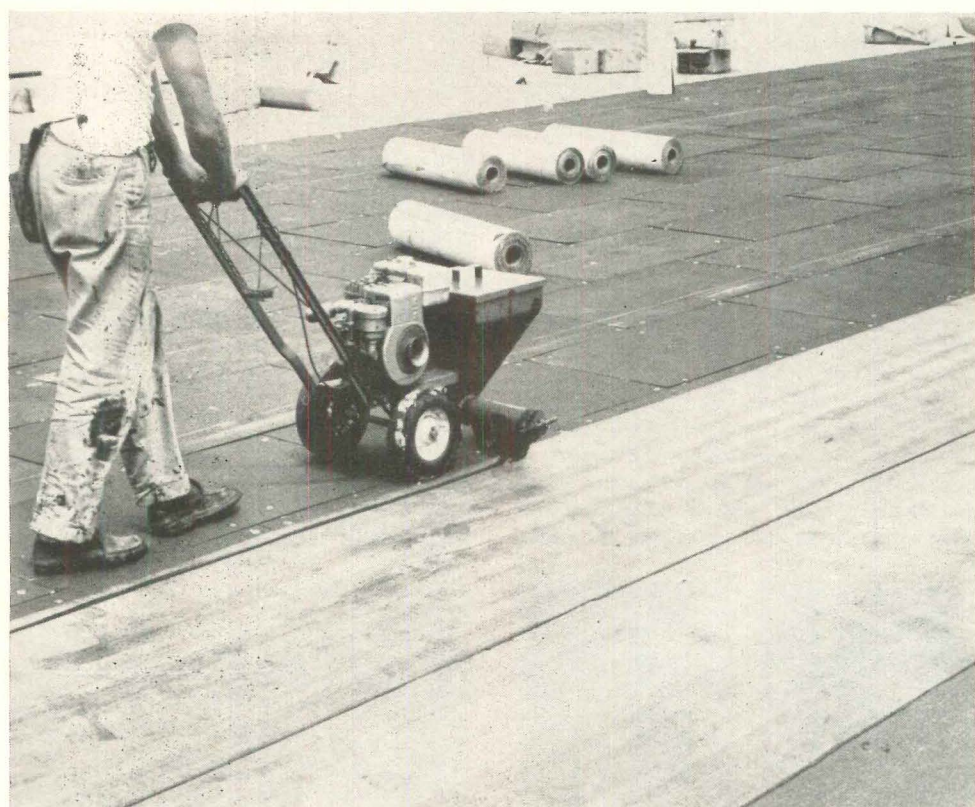
Designed and fabricated by Birdair for Eggers & Higgins and Walter Dorwin Teague, Schaefer's architects and designers, the balloon roofs are disc shapes of nylon and glass fiber held in low-pressure pumping collars (see drawing). The two skins of the balloon will rest on plastic-coated steel columns tapered at both ends. Wall panels are bubbled plastic.

The three roofs are of different sizes, the biggest being 88 feet in diameter and 12 feet deep. The petal pattern of each roof is made by the pie-shaped sections of fabric. The cost for this kind of roof is about \$4.50 to \$6.50 per square foot of covered space; additional roofs of the same design would be considerably less.

*Manufacturer:* Birdair Structures, Inc., 1800 Broadway, Buffalo 12, N.Y.



DETAIL OF COMPRESSION RING



### SINGLE-PLY ROOFING

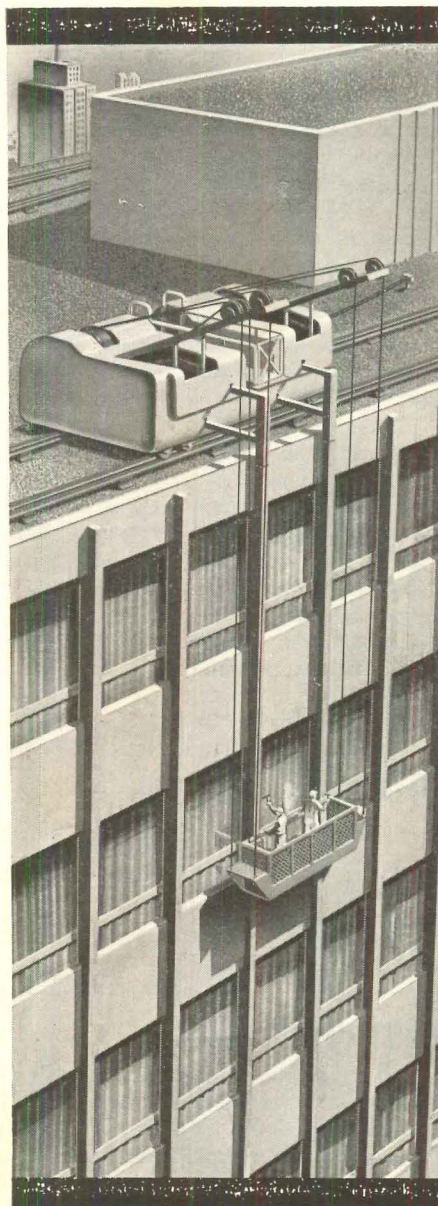
Johns-Manville's new prefabricated one-ply roofing goes down on almost any roof surface, directly on the deck or over a layer of insulation. *Last-O-Roof* is elastic, durable, and lightweight, made of a polyisobutylene compound bonded by an elastomer to asbestos backing. J-M imports the polyisobutylene for the plastic surface, originally developed in Germany and used there for a decade.

The photograph at left shows the application process, in which workmen apply cold cement in ribbons, preparing the way for the membrane (*Last-O-Bestos*), lapping it 3 inches on the sides and 6 inches at the ends. Laps are sealed with cement (*Last-O-Lap*) of a slightly different formula from the adhesive in the first step. The other parts of the system are a flashing membrane, a heavier version of *Last-O-Bestos* with a glass-fiber mat added, and a more elastic membrane for special fitting problems. The last step in the application procedure is the *Last-O-Lume* finish, which may be plain white, silver, or metallic pastels of green, blue, or rose. The membrane without the finishing coat is black. With the top coating, which it heartily recommends, J-M guarantees the roof for 20 years.

*continued on page 56*



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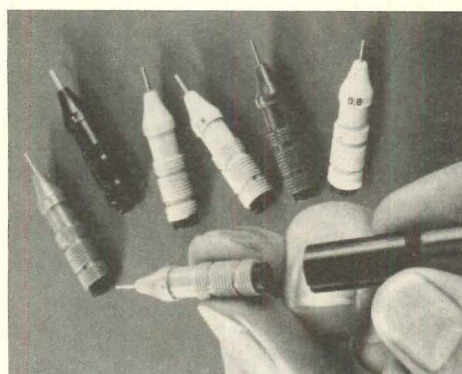
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The complete roof weighs about 52 pounds per 100 square feet, its light weight being the chief factor in quick application. If two men apply adhesive from powered equipment and several others carry and lay the membrane, it is possible to lay 1,600 squares (160,000 square feet) in an eight-hour day.

As for the cost, J-M will say only that it is "at a slight premium over conventional smooth-surface asbestos builtup roofs," and that it is competitive with Ruberoid's T/NA Tedlar roofing (FORUM, Sept. '62) and Armstrong's F/A Roofing (Feb. '61).

Manufacturer: Johns-Manville Corp., 22 E. 40th St., New York 16.



### NEW DRAFTING PEN

The Mars 500, a new technical fountain pen, has extra-long points that are said to last four to 20 times longer than those of conventional pens. This pen and an assortment of seven points are intended for use on drafting film, which ordinarily grinds pens down in short order. The pen is said not to clog despite several days of disuse.

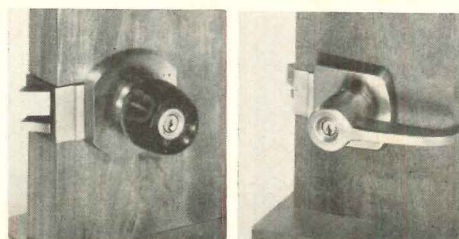
The package of one pen and one point costs \$4.95. Additional points at \$2 apiece may be used in this and other pens.

Manufacturer: J. S. Staedtler, Inc., 25 DiCarolus Ct., Hackensack, N.J.

### NEW DOORKNOBS

A quartet of doorknobs, two of which are special-purpose designs, are new additions to Yale & Towne's hardware.

The knobs below are the *Classic* wooden knob, one of seven designs which has the lock set into the wood, and the *Saxon*, a lever handle for convalescent homes and apartments for the elderly. The wooden knobs come in walnut, rosewood, cocobolo,



and stratawood. The Saxon's handle has a flat top extended toward the edge of the door; pressure anywhere on it releases the latch.

Two other new knobs, not shown here, are the *Copenhagen*, a completely spherical knob finished in bronze, brass, or chrome, and the hotel *Monolock*, which has a removable locking cylinder that can be transferred from one knob to another with the proper key. A guest checking into a hotel or motel gets both the cylinder and the key to his room.

Costs for complete lock sets—inside and outside knobs and the locking mechanism—range from \$10 to \$50 per set.

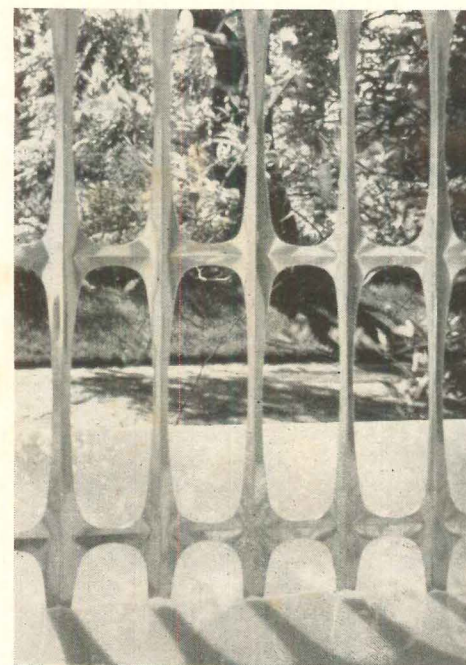
Manufacturer: Yale & Towne, Chrysler Building, 405 Lexington Ave., New York 17.

### SCULPTURAL GRILLE

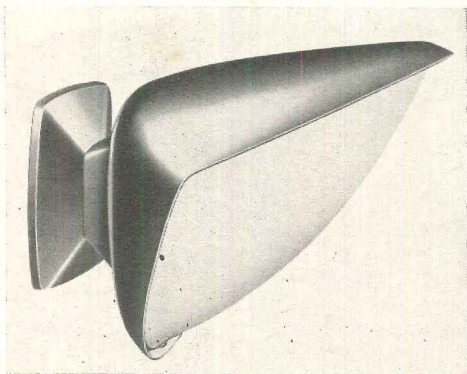
This big aluminum grille is part of a balcony enclosure for Reynolds Metals' River Park, a cooperative apartment development in Washington, D.C. Architect Charles M. Goodman designed it to be fabricated inexpensively from flat sheet and assembled in balcony-size units at the factory, ready for erection. The same method applies to a variety of grille designs fabricated on a custom basis.

Each grille begins as a sheet 7½ feet high and 4 feet wide (half shown here), which is punched into a grid pattern by a blanking press, then drawn into shape. Together with solid bottom panels, two of these grilles are welded into a heavy extruded frame to make the complete enclosure. Solid aluminum bars, horizontal to the frame, reinforce the grille on the reverse side. The complete assembly is 11 feet 9¼ inches wide and 7 feet 6¾ inches high.

Manufacturer: Reynolds Metals Co., 1419 Dixie Highway, Louisville, Ky.







### \$9 FLOODLIGHT

This inexpensive outdoor floodlight, the Westinghouse *Twi-lite Luminaire*, sheds a soft glow over malls, plazas, and building entrances, and other places where powerful large-scale lighting is not required. The simplicity of its design—a cast aluminum case, an acrylic diffuser, and stainless-steel hardware—makes it possible to sell this light for less than \$9, plus another \$2 to \$4 for a pole-top adapter and a mounting plate.

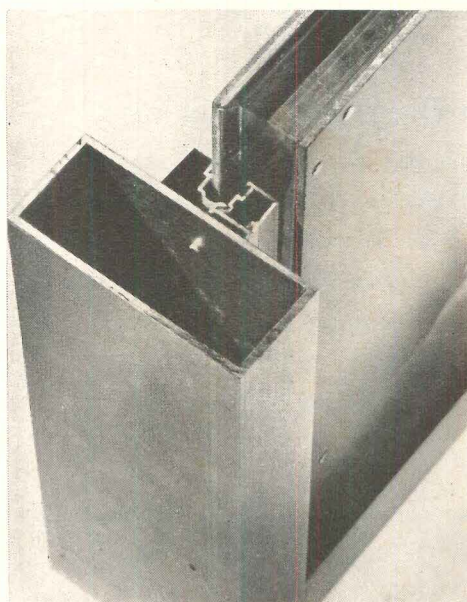
The baked enamel finish on the case comes in tan, green, black, or white. The fixture takes a standard 150-watt incandescent lamp.

*Manufacturer:* Lighting Division, Westinghouse Electric Corp., Edgewater Park, Cleveland.

### LOW-COST CURTAIN WALL

U.S. Plywood's Glasweld, a thin asbestos-reinforced panel imported from Belgium, is the principal component of a new curtain-wall panel that costs only \$1 per square foot. The company claims that this is lower than any other permanently colored, incombustible sandwich panel on the market.

To make fabrication of the complete panel easy for glass firms and curtain-wall erectors, U.S. Plywood developed an alumi-



num frame of simple contours which can be formed on a press break. The sandwich is two skins of Glasweld, stiff enough to be used without additional reinforcing, and a loose core of glass fiber. The aluminum frame, a U-shaped channel, is screwed to the edges of the sandwich. The fasteners, which appear to be prominent in the photograph, are hidden by the curtain-wall frame. The bottom channel is drilled for weep holes.

*Manufacturer:* U.S. Plywood Corp., 55 W. 44th St., New York 36.

### PREVIEWS

Glass that darkens on exposure to light and returns to its original color when the light is removed might some day provide "automatic sunglasses" for buildings. Windows facing the sun would darken but remain transparent, and fade immediately at sundown.

Working at the Mellon Institute in Pittsburgh under a research grant from Pittsburgh Plate Glass Co., Alvin Cohen and Herbert L. Smith discovered that small amounts of rare earths (cerium III or europium II) added to suitably purified glass absorb sunlight and transfer photoelectrons to "traps." The traps form color centers which absorb light in the visible spectrum. On exposure to light, colored glass becomes a deeper shade of the same color; clear glass turns amethyst. The amount of light governs the intensity of the color.

After long periods of continuous coloring and fading—just how long depends on the light's intensity—the absorption band decays and must be restored. This is done by exposing it to large amounts of ultraviolet light. To restore absorption in a large building's windows, ultraviolet lamps might be mounted on platforms similar to window-washing rigs. This could be done at night or whenever the building was unoccupied.

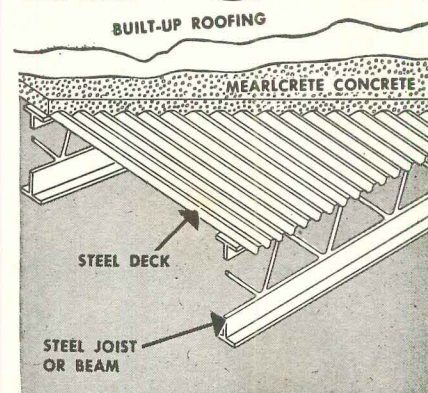
At present, however, optical glass seems to be the most promising commercial product, offering bonus sunglasses to owners of prescription lenses.

A new family of plastics, to which the Union Carbide Plastics Co. has given the name *phenoxy*, shows promise as structural adhesives for wood and steel and as tough protective coatings for metal, wood, and more flexible materials. Furthermore, phenoxy can be extruded and molded by several techniques.

An adhesive made from the new family, Bakelite Phenoxy PRDA-8080, is a one-part package that requires no mixing or special handling. It is applied in a layer to the two surfaces to be joined, and the parts are first heated briefly, then cooled. Curing is complete as soon as the joint cools. Besides being strong (a shear strength of 3,000 psi), phenoxy is ductile: metal sandwiches can be cold-formed into rigid shapes without adhesive failure.

END

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**lightweight**

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Competitive with all other systems!

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**HIGH INSULATING VALUE**—Reduces initial cost and operating cost of heating and cooling plant.



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#9362

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Chestnut 5-9500





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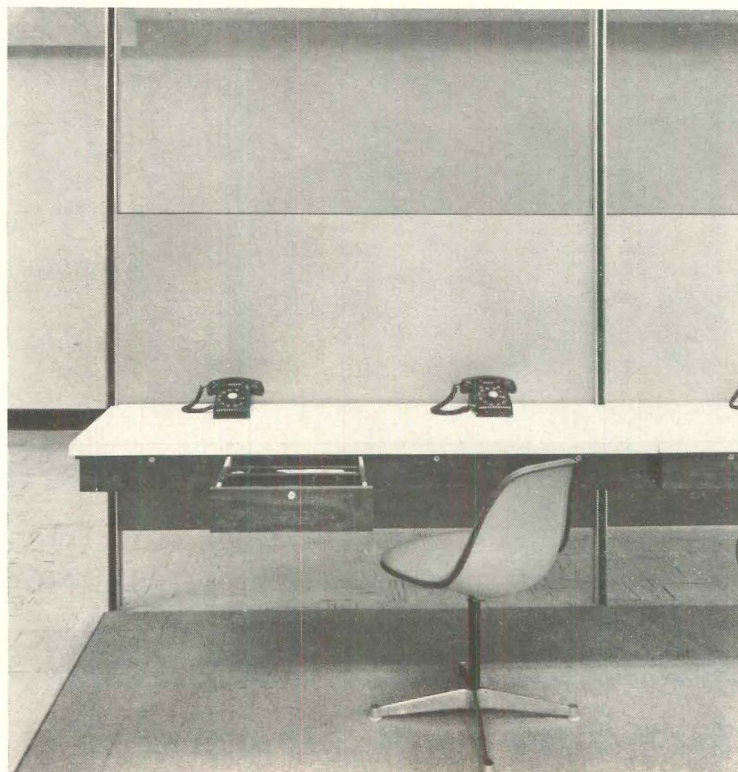
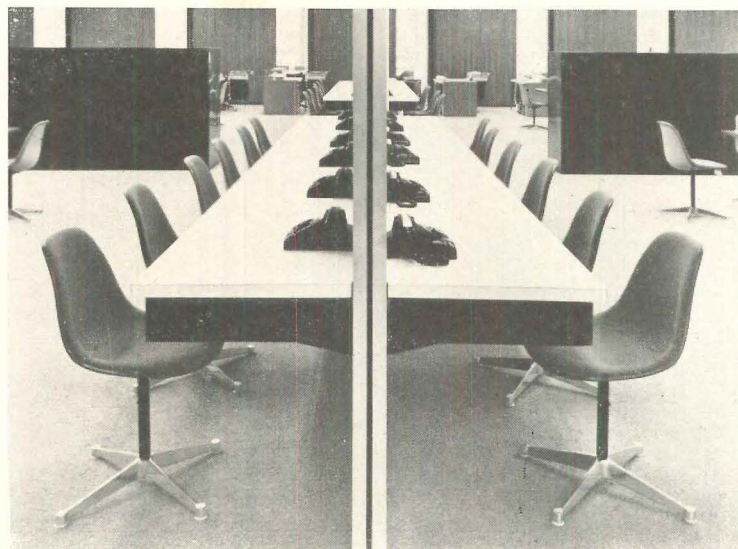


Complete information on Steelcase desks, chairs, and files. Address Dept. A.

# STEELCASE INC



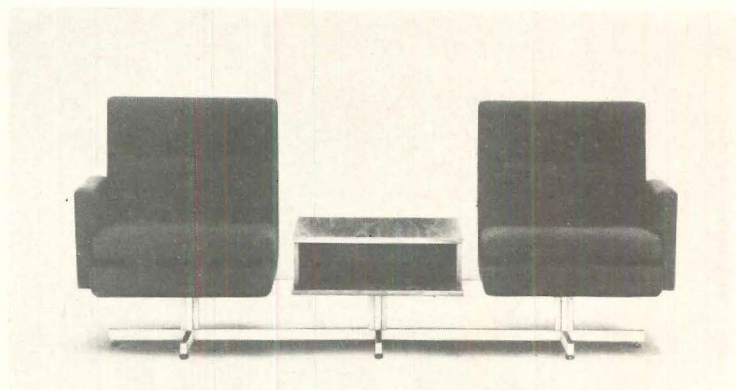
*Pole-hung offices, air-filled plastic chairs*



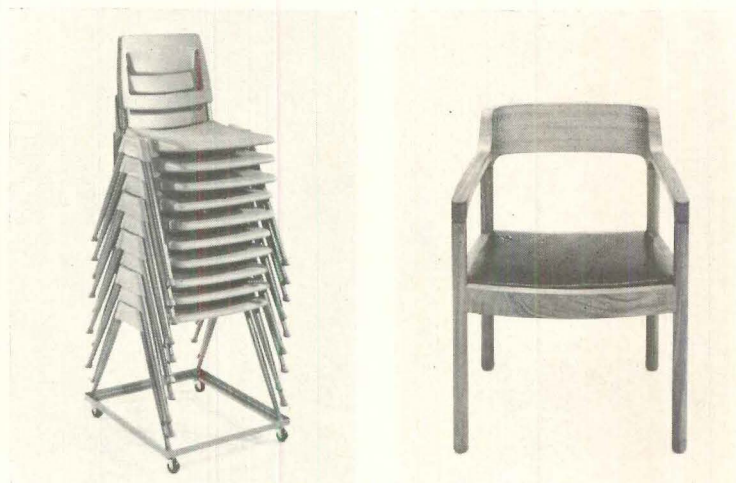
1

**1. SPACE SAVERS.** Bound to the same leased quarters despite a larger staff, IBM's Chicago West Branch office had to find a way to squeeze 96 people into a room already crowded with 60. Luckily for the success of the tight arrangement IBM had in mind, this is a sales office, so all 96 men would not be in at the same time. IBM took its ideas to the Detroit Partition Co., which carried on from there, designing and fabricating the pole, partition, and desk units in the photographs above. The pole is a double chan-

nel carrying telephone and power lines through an overhead feed. Each 6-foot module, to which four men are assigned, has two phones and four drawers, counting on only two men being there at once. The desk units are steel sandwich panels covered in white melamine plastic, with walnut veneer drawers. The partition panels in back are covered in a vinyl fabric. Lined up two to a unit, the chairs are an adaptation of a Charles Eames design for Herman Miller. The cost of each 6-foot unit is about \$450.

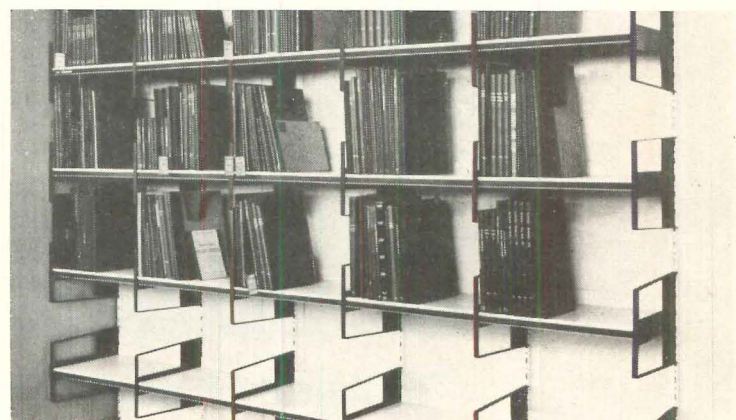


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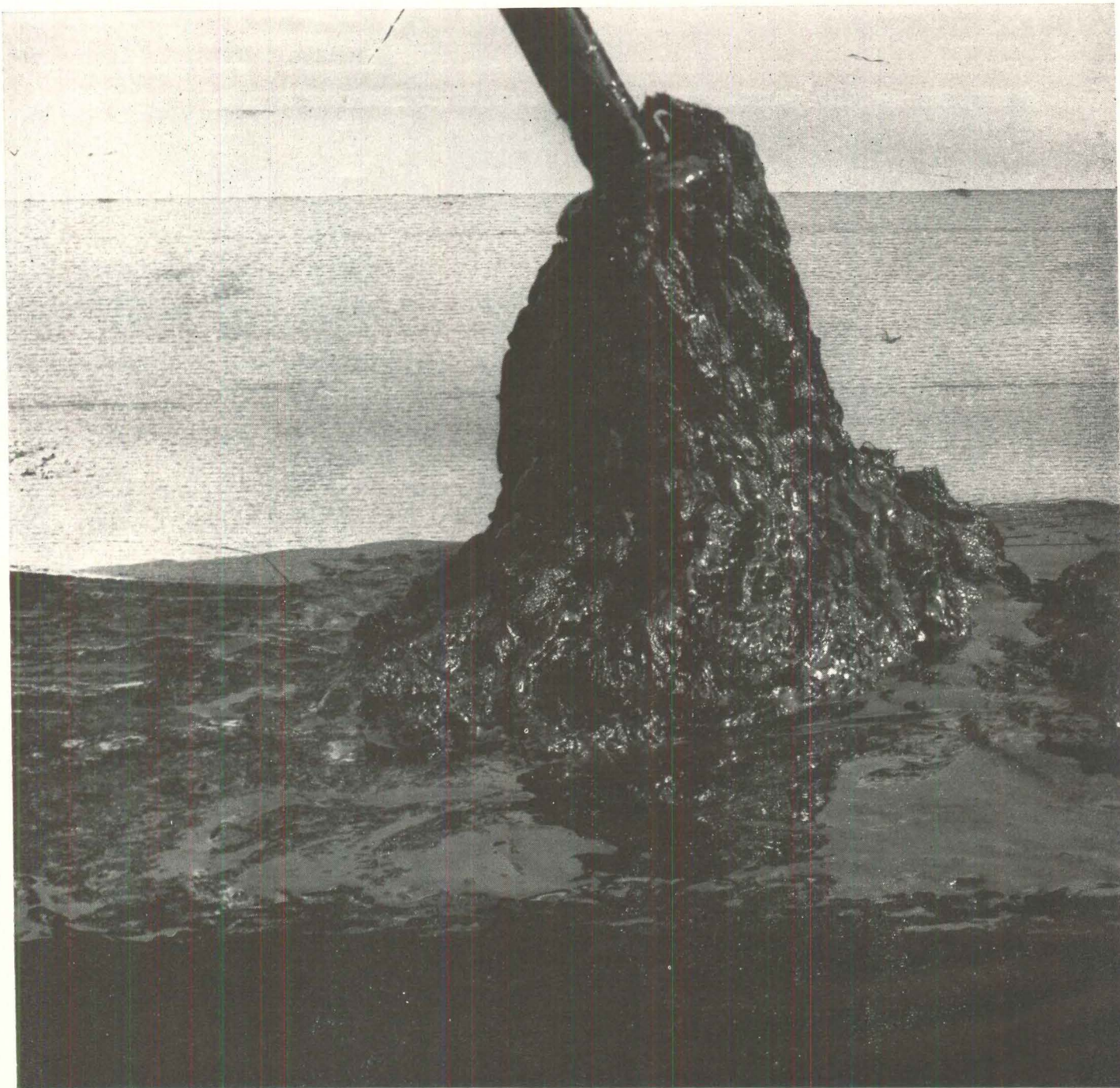
**2. RECEPTION-ROOM UNIT.** Part of Kasparian's X-Alum collection—chairs and tables mounted on extruded aluminum frames—this new unit has two upholstered chairs and a polished walnut table, all on a single base. Cost: \$790, excluding fabric.

**3. BLOWN-UP CHAIRS.** Blow molding, familiar as a technique for making plastic squeeze bottles, builds cushions of air inside the seat and back of American Seating's Bodi-Rest chair. Legs and back supports are tubular steel. The chairs cost under \$12 apiece

and may be stacked and ganged. **4. TEAK ARMCHAIR.** The simplicity of this open-armed chair, designed by Lydia dePolo and Nicos Zographos for Albano's Contract Division, makes it appropriate almost anywhere. Cost: \$179.

**5. DANISH SHELVES.** Reska, Inc., a new firm in Buffalo, imports the Reska Danish Library System. The components are slotted supports (freestanding or wall mounted), brackets, and shelves. Units are welded steel, finished in black or white enamel. A six-shelf wall like this one costs \$60.



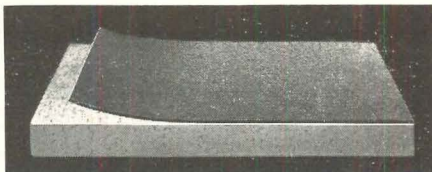


**"Roofmate FR makes this the best roof you've ever worked on"**

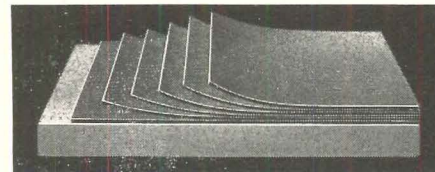
Here are the simple steps to a better built-up roof using Roofmate FR and coated base sheet



**1.** Roofmate FR is laid on concrete, gypsum, wood or metal structural deck over strip-mopped coat of hot asphalt.

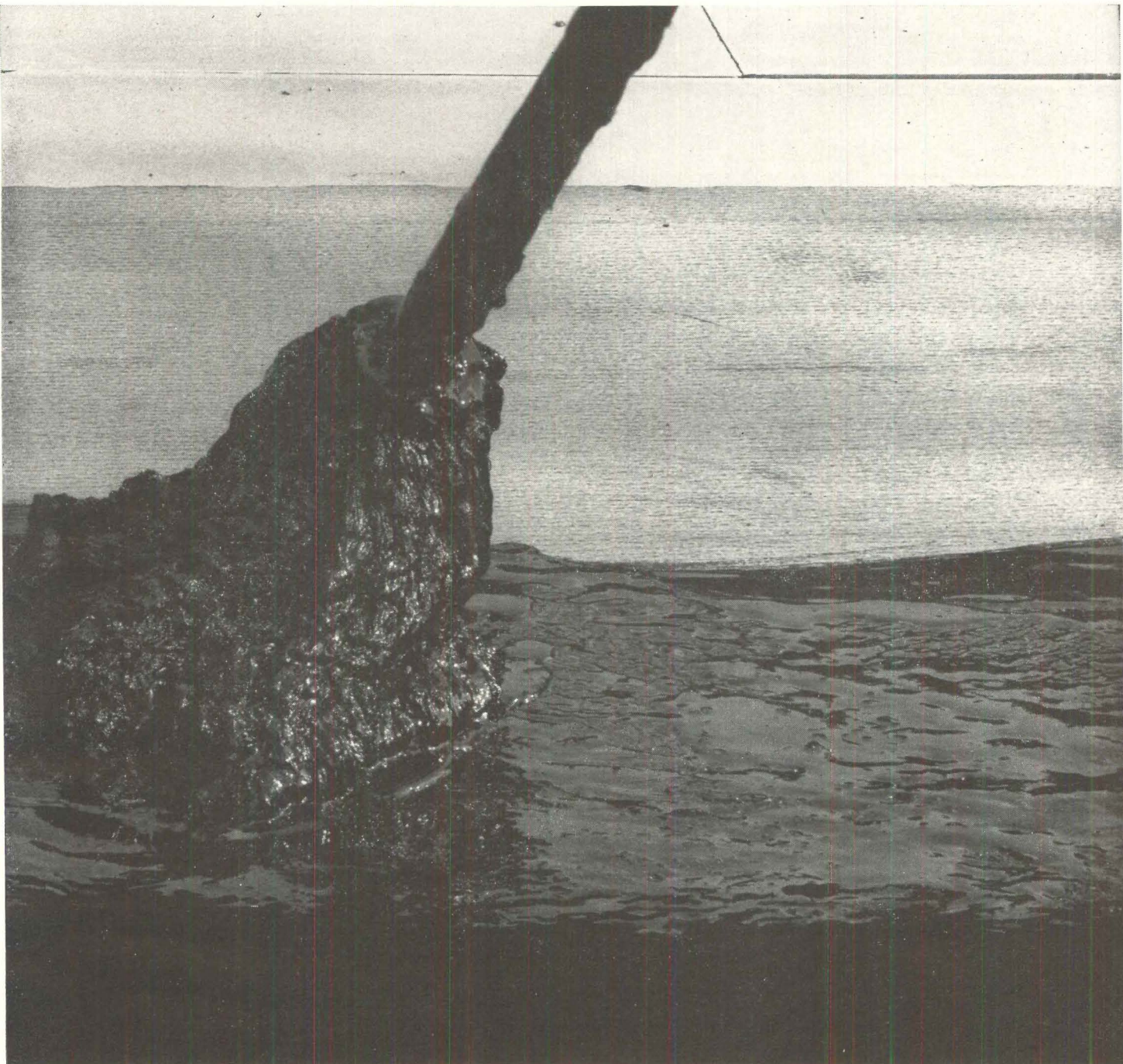


**2.** It is covered with an approved coated base sheet. Next layer of hot asphalt bonds base sheet to Roofmate FR.



**3.** Roof is completed by building up standard roofing felts in conventional manner, either by hand or by machine.





## "What a build-up!"

Matter of fact, this *is* the best insulated roof yet—right down where it counts! Based on Roofmate® FR roofing insulation, a new system builds up this superior roof *faster*.

Roofmate FR flame-retardant polystyrene foam board has a high-density skin, good impact resistance and compressive strength. It can even span the flutes in a metal deck. Closed-celled and nonabsorbent, Roofmate FR is unaffected by water. So it has permanently high insulating value.

When you specify Roofmate FR, the roofer still works

with conventional materials (see steps at left). Using coated base sheets eliminates the disadvantages of unprotected moisture-absorbent felts for the first ply and prevents wrinkling at the insulation joints. Roofmate FR is used as the vapor barrier. These roofs are bondable, of course.

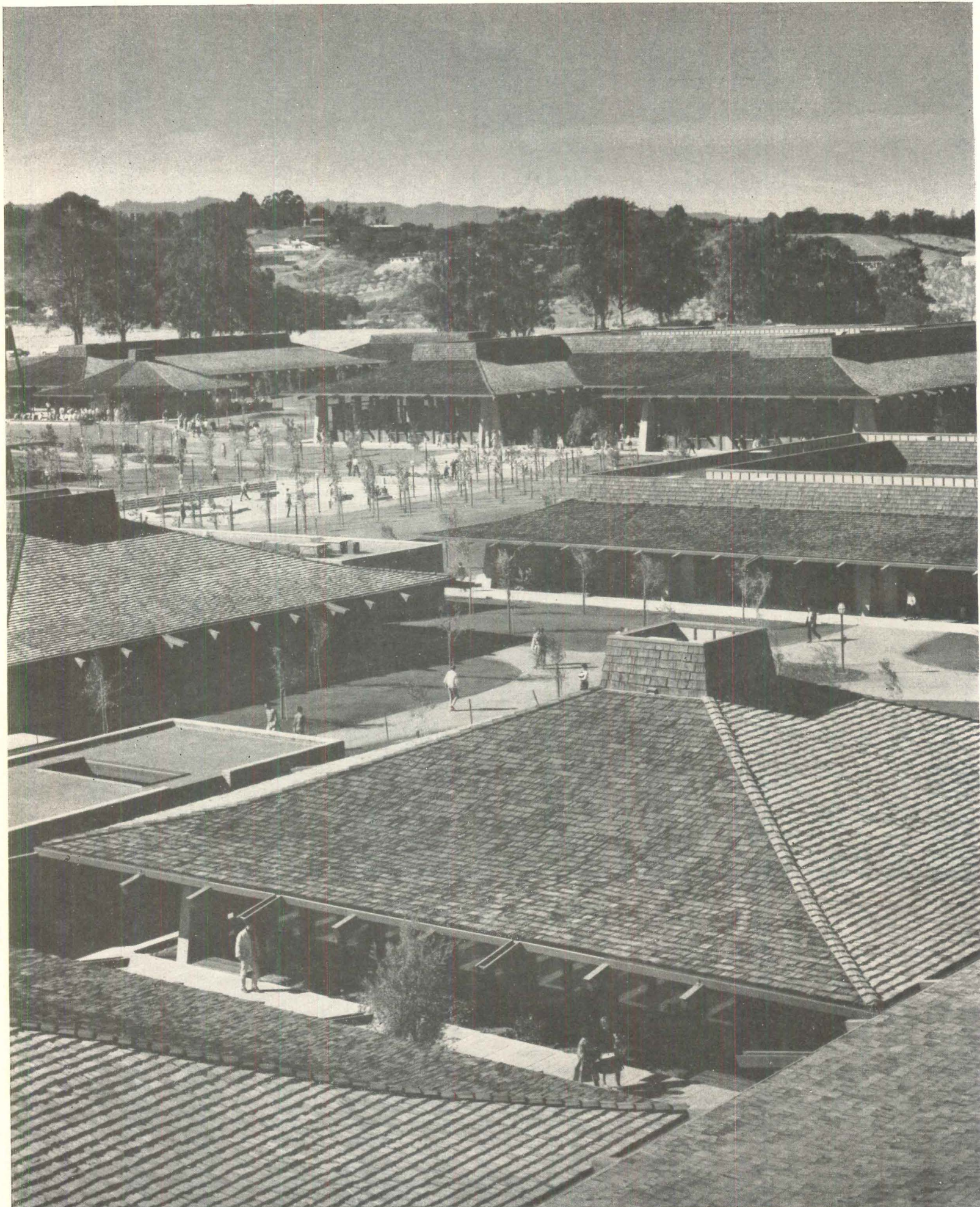
Extremely lightweight Roofmate FR saves preparation time and trouble, too. It comes in thicknesses for most roofing applications. To get more data and specifications, write us in Midland, c/o Plastics Sales Dept. 1302LH12.

**THE DOW CHEMICAL COMPANY**



Midland, Michigan

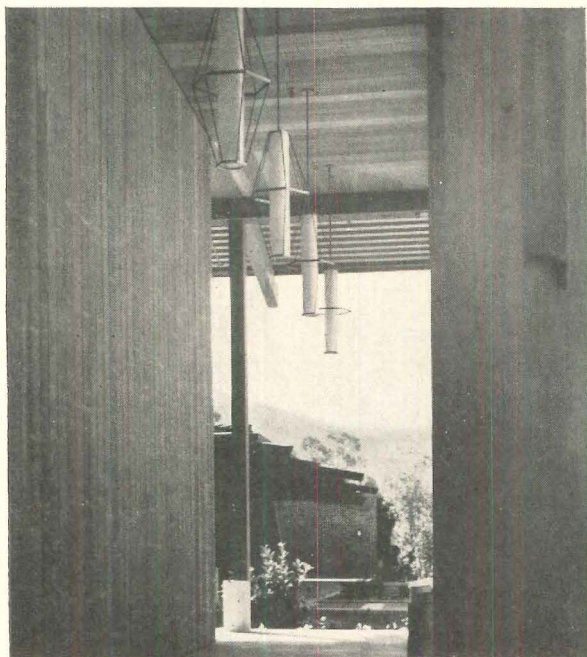




From 382 designs, 1962's First Honor Award in the A.I.A. 14th annual Honor Awards Program went to Foothill College, Los Altos, California, for its "individual and artistic expression," and the environment for learning it creates. Architects: Ernest J. Kump and Masten & Hurd, Architects Associated.



*For new lessons in school design*  
use **WOOD** . . . and your imagination



The out-of-doors is effectively framed in wood by this corridor's planked walls and ceiling. Exposed posts and supporting members for the roof-overhang show more of wood's predominance in Foothill College's award-winning design.

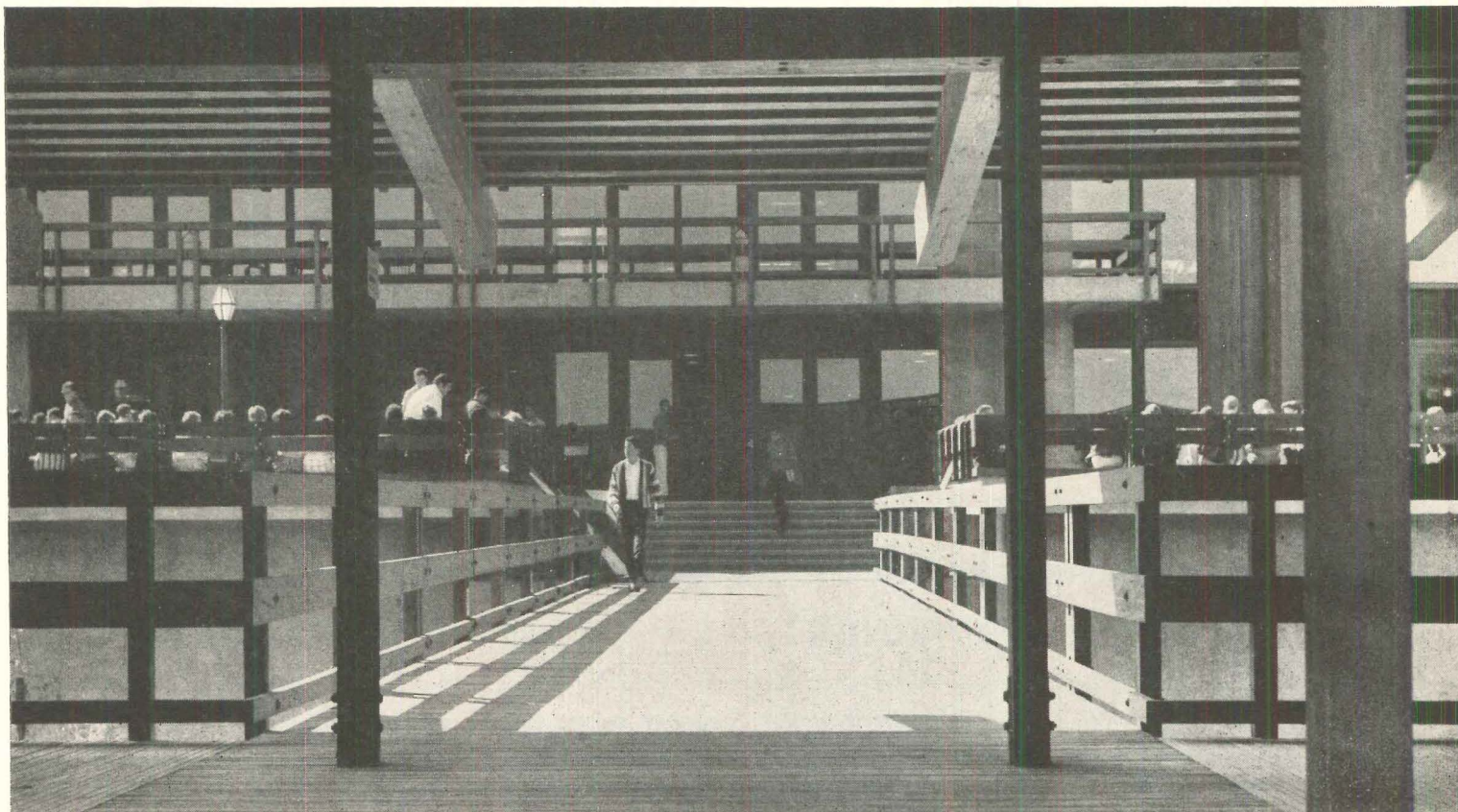
Wood's adaptability helps win awards for many schools of design. But just as important, wood's familiarity helps win the acceptance of students, faculties, and communities in schools of any design. No matter what shape or form it's in—shingle roofing, exposed framing, solid paneling—wood makes a classroom a friendly place for learning and teaching alike . . . a gymnasium spectacularly spacious for sports, an auditorium acoustically sound for listening.

The economy of wood begins with your original plans . . . extends into future alterations needed for growing enrollments on non-budging budgets. Wood has the capacity to welcome other materials, too; the inherent strength to stand up under generations of classes to come. For more information on designing schools with wood, write:

**NATIONAL LUMBER MANUFACTURERS ASSOCIATION**  
*Wood Information Center, 1619 Massachusetts Ave., N.W., Washington 6, D.C.*

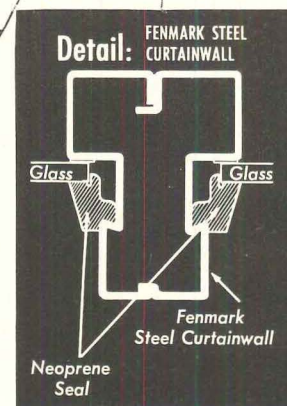
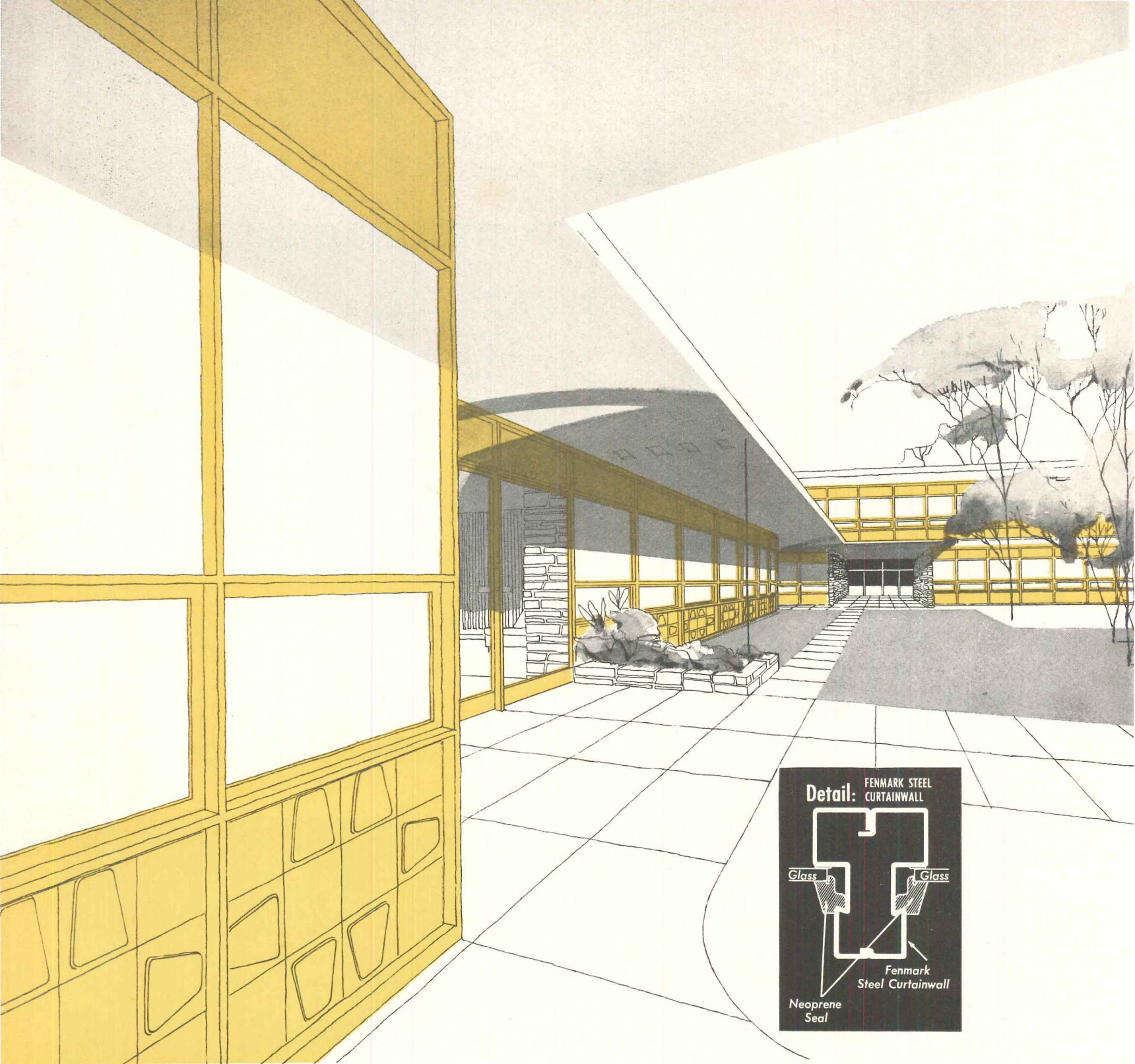
nlma

*find the better way with* **wood**



Virtually all wood, this entranceway to the space module unit makes extensive use of naturally finished posts and beams. Note, too, the wood decking and railing that join these Foothill College buildings beautifully and purposefully.





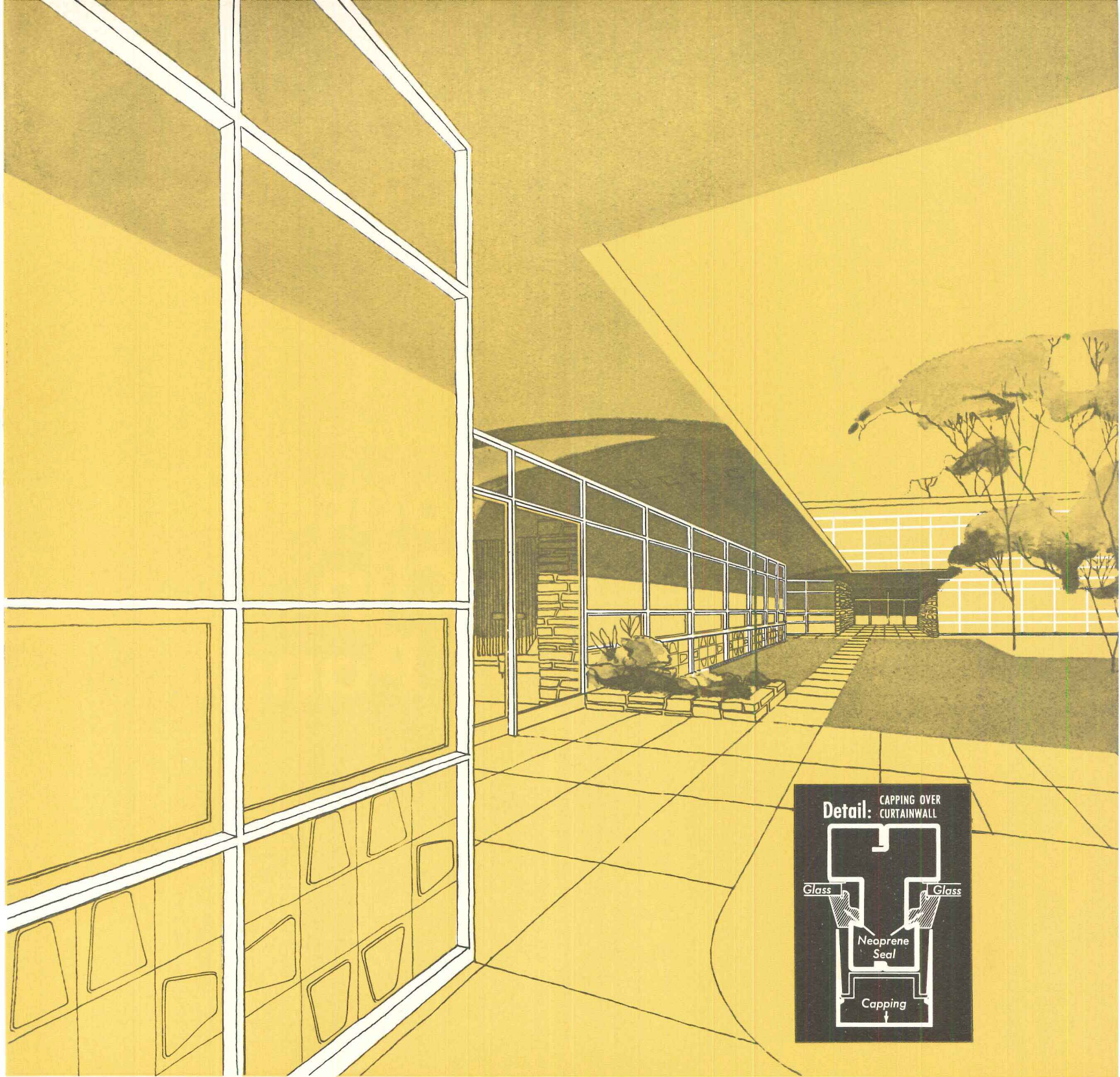
# start

*with proven, leakproof **Fenestra** steel curtainwall*

Just add capping! It's that easy. You combine the structural strength of Fenestra steel curtainwall with the lustrous finish of aluminum or stainless steel. ¶ **Curtainwall.** The subframes are steel. Advantages? *Watertightness.* There has never been a reported case of a Fenmark steel curtainwall system leaking. *Strength.* Taller, wider modules are possible while retaining a narrow subframe sight line. *Versatility.* Dimensions of vertical and horizontal members in

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*with stainless steel, aluminum or porcelain capping*

stainless steel, aluminum, or porcelainized aluminum. But because Fenestra's system is preengineered, you work with time-proven curtainwall. ¶ **Cost?** Very modest. With Fenmark steel curtainwall you get a package of unequalled strength, versatility, variety, and watertightness. To find out more, call your Fenestra representative (he's in the Yellow Pages), see Sweets File 3b/Fe., or write, Fenestra Incorporated, 220 Delaware Ave., Buffalo 2, N.Y.



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FLOORS, WALLS • METAL DOORS • GUARD SCREENS



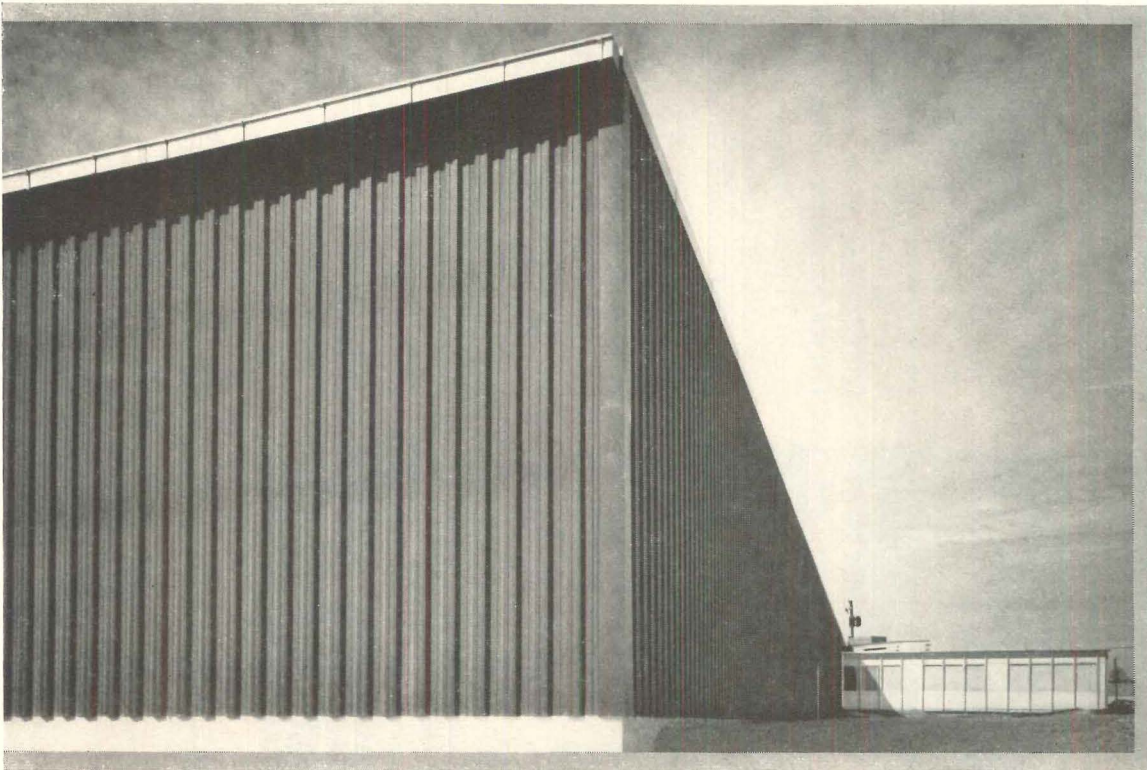
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# **Concealed Clip Panel**



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## **Aluminum Walls and Roofing Attain New Dimensions With "CCP" Panels up to 40' High...Seamless Effect Carried to Full Length...New Design Values!**

Now, all the advantages of aluminum siding and roofing together with the unbroken continuous pattern so many architects want. No exposed standing seam, no obvious panel width, no button-punching, capping or swaging, and no exposed panel fasteners. The 12-inch Concealed Clip Panels\* interlock to form any desired exterior width. And you have a choice of three gauges (.032", .040", and .050") in natural aluminum and in eight exclusive Reynolds Colorweld® colors.

"CCP" adds new versatility to the low maintenance and long life of rustfree, corrosion-

resistant aluminum. The panels have good spanning characteristics. They are adaptable from single skin to insulated wall construction by the simple addition of insulation clips during erection. And combinations with other building materials present interesting aesthetic possibilities.

Finally, Reynolds Aluminum "CCP" is a thoroughly tested material. Its distinctive side lap has proved weathertight in wind and rain of hurricane velocity. For full information write to Reynolds Metals Company, Dept. "CCP", Richmond 18, Virginia.

\*Patent applied for.



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Watch Reynolds exciting TV programs on NBC: "The Dick Powell Reynolds Aluminum Show" Tuesday nights; "Say When", weekdays; "All Star Golf"—in living color—starting January 5.



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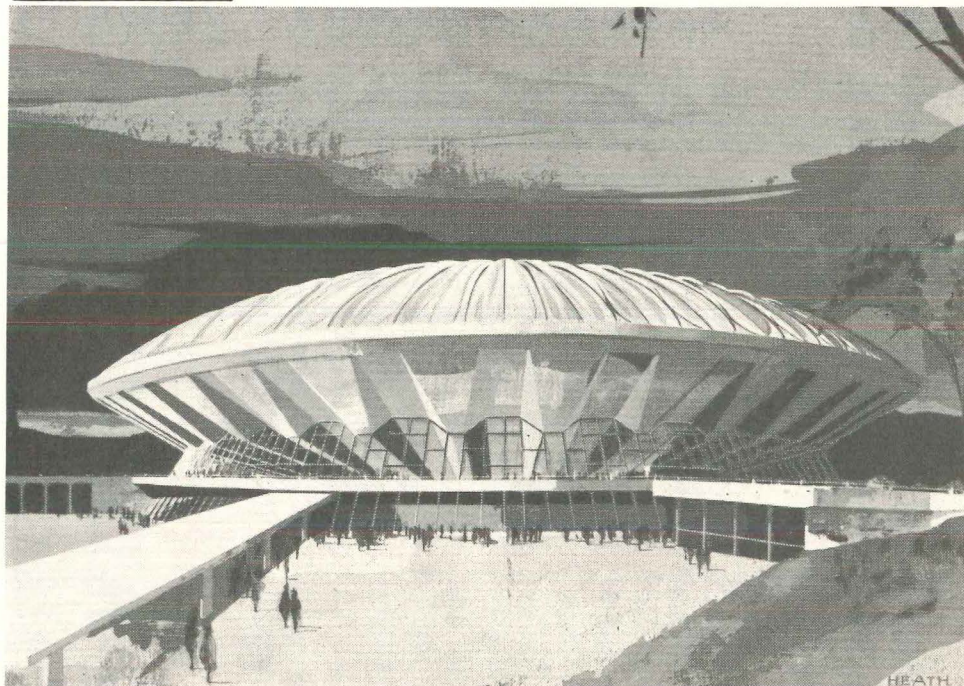
7

## modern concrete forming

a.i.a. file: 4-a

Prepared as a service to architects by Portland Cement Association

Clip along dotted line



Movable forms were used for world's largest concrete dome. University of Illinois Assembly Hall. Architect: Harrison & Abramovitz. Structural Engineers: Ammann & Whitney, New York

STRENGTH OF CONCRETE FOR SAFE FORM REMOVAL		AVERAGE TIME TO OBTAIN STRENGTH*
Concrete not subject to bending (tops of sloping surfaces)	500 psi	24 hours
Concrete subject to bending caused by: 1. dead load only 2. dead and live load	750 psi 1500 psi	36 hours 3 days
Concrete subject to high stresses (roof or floor slabs and beams)	2000 psi	4½ days

\*Concrete with Type I portland cement: 6½ gallons / bag at about 70° F.

PORTLAND CEMENT ASSOCIATION

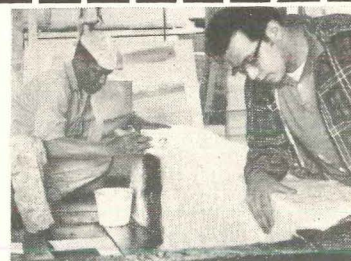


Fig. 1

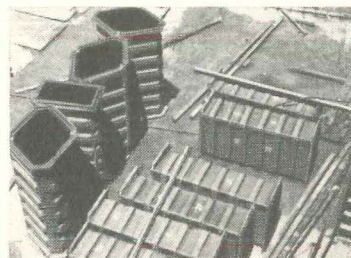


Fig. 2

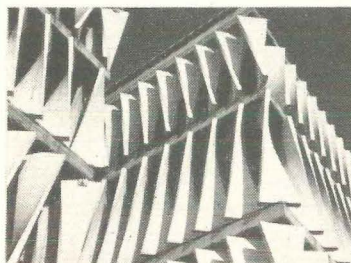


Fig. 3

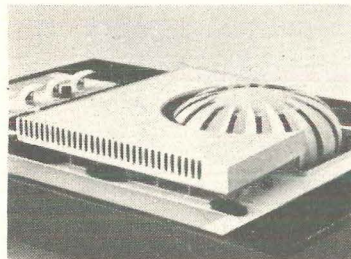


Fig. 4

New forming and casting methods, as well as advanced building techniques, encourage dramatic increase in use of sculptured concrete. The advantage of rapid form removal (in some cases forms can be stripped after one day and reused immediately) has given concrete an economical and esthetic design versatility. In addition, new forming methods and materials permit the higher reuse of forms, sometimes as high as sixty times. An example of one method of new form construction is shown in Fig. 1. The master mold is draped with fiber glass reinforcement, which will be firmly embedded in a thick coating of polyester resin. (Photo: Engineered Concrete Form Corp., Chicago.) Fig. 2 shows completed forms for Marina City, Chicago. Fig. 3: True hyperbolic paraboloids were used in the Henry Ford Hospital parking structure, Detroit. The 7-ft. 4½-in. concrete panels have a 90° twist, are 24 in. wide top and bottom and 18 in. at waist. (Architect: Albert Kahn.) Fig. 4: The Wyoming National Bank at Casper, Wyoming, illustrates the complete freedom possible in concrete. (Architect: Marvin E. Knedler, Designer: C. Deaton.)

Write for free information. (U.S. and Canada only.)

Dept. 12-7 33 West Grand Ave., Chicago 10, Ill.

A national organization to improve and extend the uses of concrete



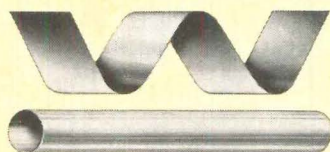
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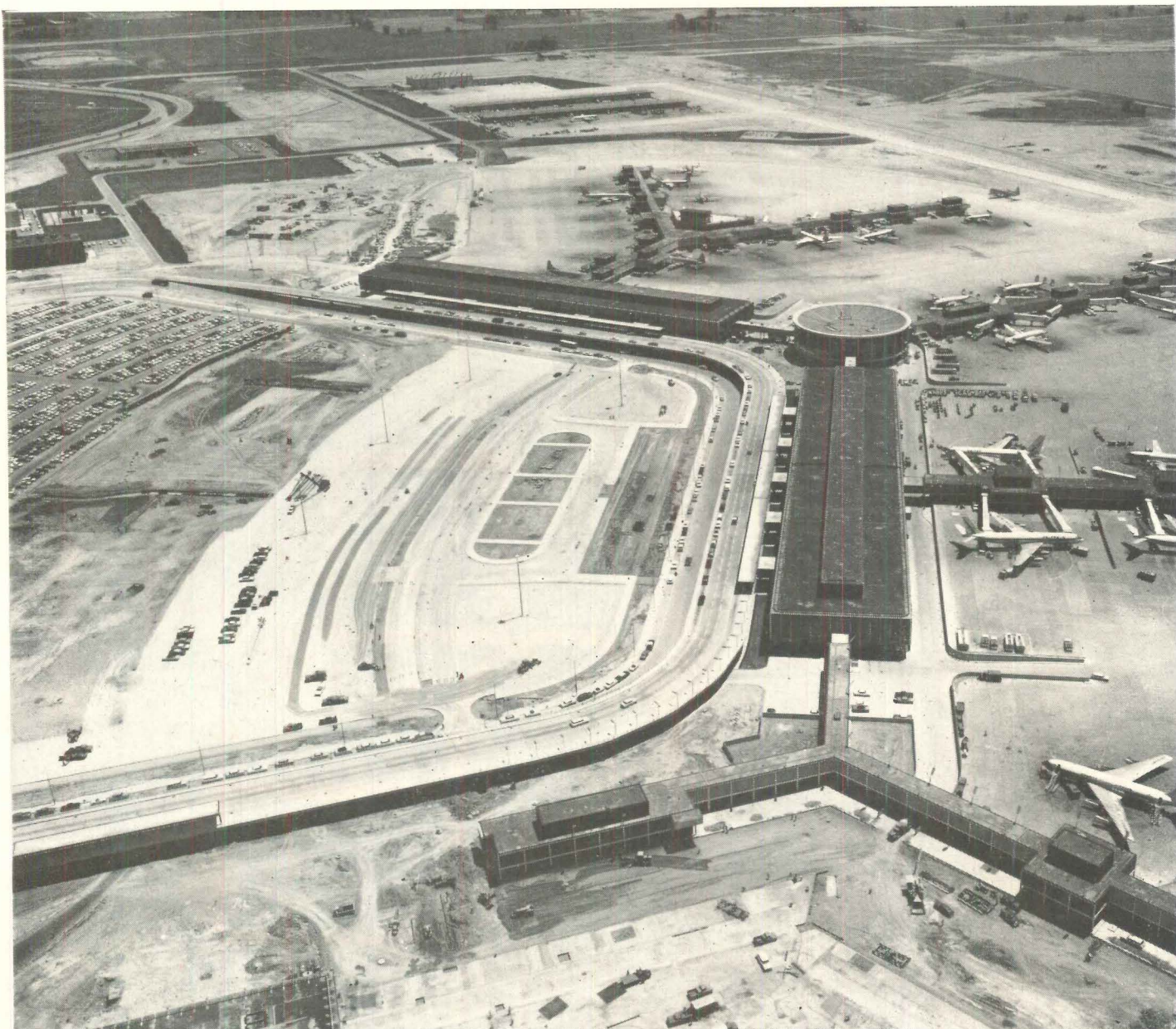
*stainless is never styleless*

**THE WALLINGFORD STEEL CO.**

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## At Chicago O'Hare International Airport, **B & G Hydro-Flo®**

### 320

**B&G BOOSTER  
PUMPS**

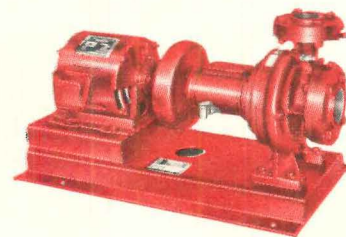


The number of B&G *Hydro-Flo* System Units installed at O'Hare Field reflects the vast size of the airport. 462 B&G pumps and 46 B&G heat exchangers are required to furnish hot water and circulate it through the heating system. This installation aptly demonstrates the superior qualities of circulated water as a means of heating or cooling a structure.

The B&G *Hydro-Flo* System is extremely flexible

### 127

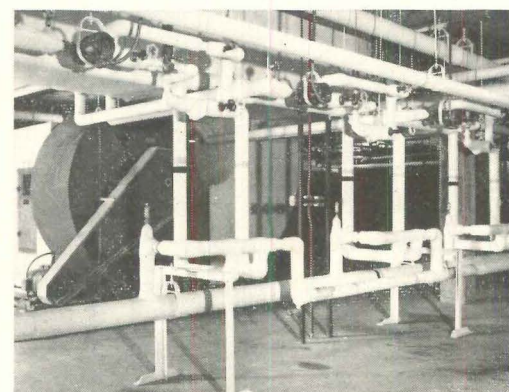
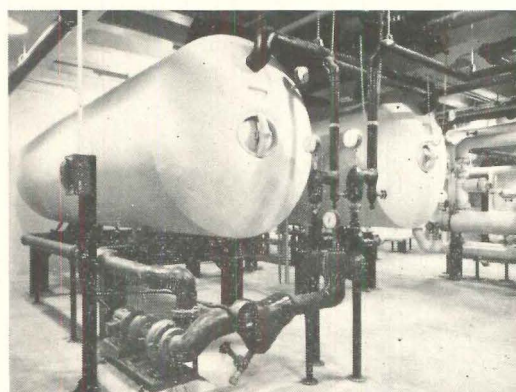
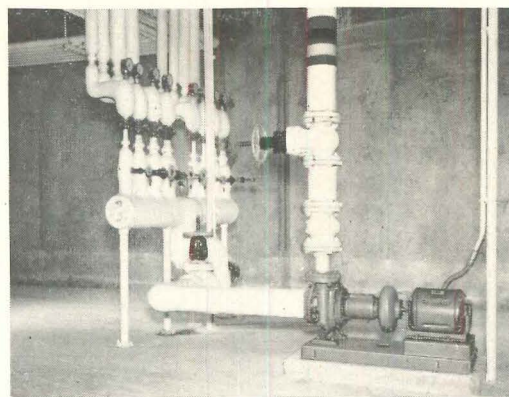
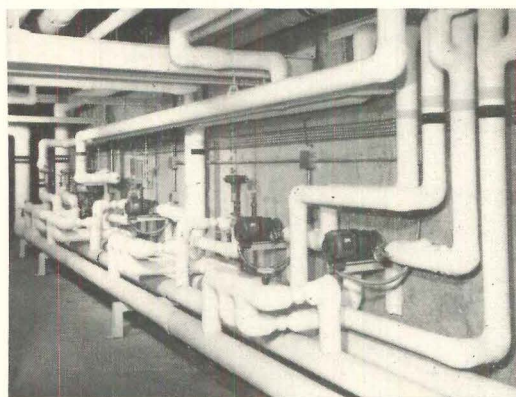
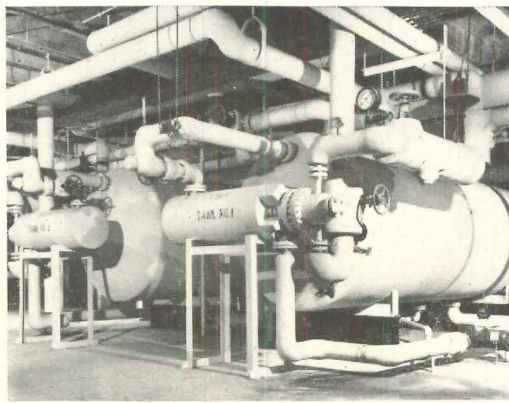
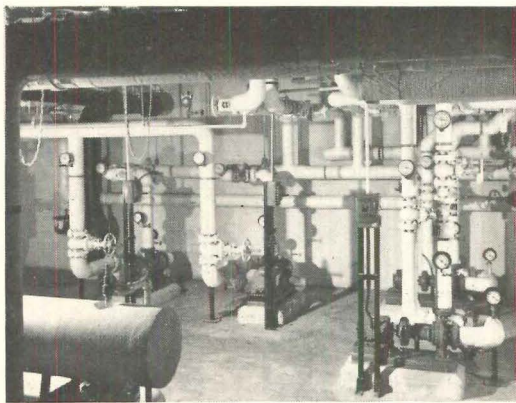
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*Typical installations of B&G equipment at O'Hare Field*

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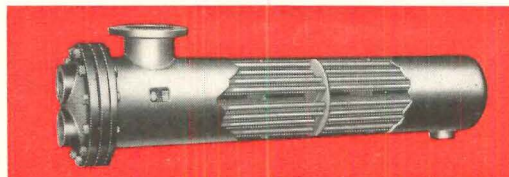
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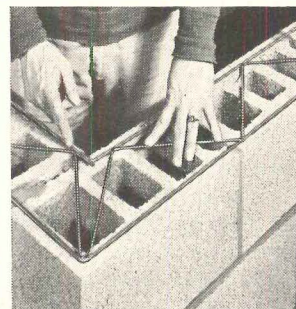
Not how cheap, but how long until the wall needs costly repairs? That's the question if you really want to get the most for your building dollar. It's the reason why Dur-o-wal masonry wall reinforcement is specified throughout the continent. Dur-o-wal can more than double flexural wall strength and, when used in lieu of brick headers for composite masonry walls, increases compressive strength several times over. Years—which more than make up for the initial cost of Dur-o-wal—are added to masonry wall life. Please pass the evidence? Write to nearest address below for new comprehensive Dur-o-wal data file.

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*Strength with flexibility—the two basic factors for a repair-free masonry wall are assured by these engineered companion products. Dur-o-wal reinforcement, top left, increases flexural strength 71 to 261 per cent, depending on weight Dur-o-wal, number of courses, type of mortar. The ready-made Rapid Control Joint, beneath, with its neoprene compound flange, flexes with the wall, keeps itself sealed tight.*





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**A hunger in the land . . .** During the closing sessions of the 87th Congress, several measures were introduced which were calculated to put the federal government squarely behind the arts. Sen. Hubert Humphrey (D., Minn.) suggested a medal be struck and awarded for "significant contributions to the arts and humanities"—a sort of civilian Congressional Medal of Honor.

Humphrey also introduced a bill, similar to earlier proposals, for a federal advisory council on the arts as part of the Department of Health, Education & Welfare. It would consist of 21 members appointed by the President from a wide range of "major art fields" including motion pictures and television.

Going further, Sen. Harrison Williams (D., N.J.) introduced a measure to establish a 25-man National Council on Architecture and Urban Design to study the state of architecture, federal and nonfederal, with an eye toward "recommending the proper role and responsibilities of the federal government."

None of these measures passed in the last-minute rush, although there is some chance that Sen. Williams' may get through the next Congress. The AIA actively opposed Sen. Humphrey's bill, largely, it would seem, out of fear that the influence of architects might get watered down if they were just part of a large committee made up of many "nonprofessionals." And the AIA raised again the argument that seems everlastingly to obstruct any progress in this direction: "Can such funds for the council's work be utilized in an atmosphere of complete esthetic freedom, without being subject to the usual controls of public bodies that oversee public grants?"

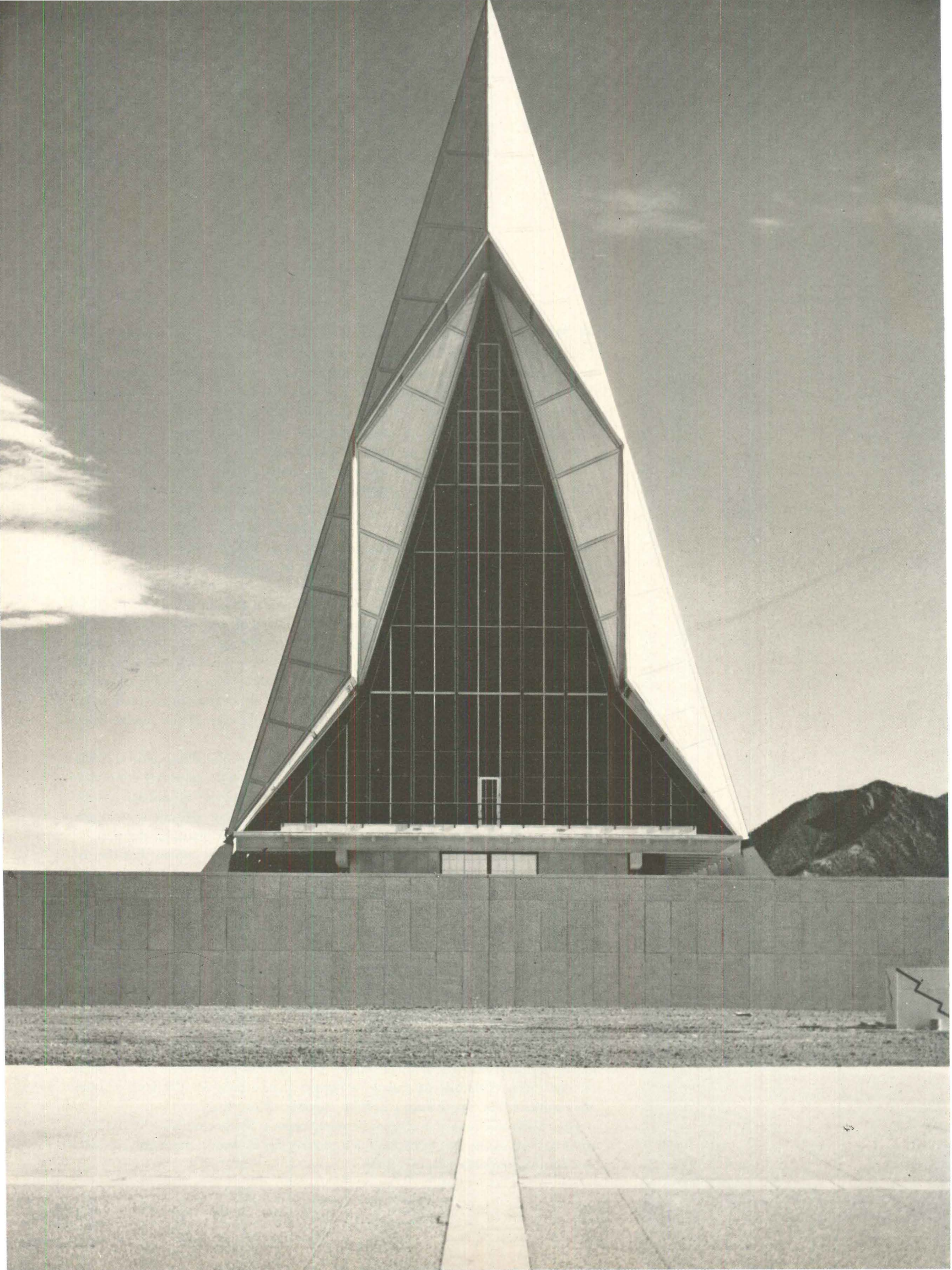
No one can say for sure. As Special Presidential Consultant for Cultural Affairs August Heckscher has stated, "the experience where government has entered directly into the field of art has too often been disheartening." Heckscher has also said, "It would surely be a counsel of despair to freeze our attitude toward government support of the arts on the basis of unhappy experiences of the past."

Heckscher firmly believes that the American people will "affirm that the arts are a significant national interest." His belief is reflected in recent developments in Washington, where the Administration has acted vigorously to preserve the strength of the past, and to demand a higher level of planning and design for federal projects. In its establishment of the Ad Hoc Committee on Federal Office Space, and in its firm action on Washington's Lafayette Square, for example, the executive branch has demonstrated that it can indeed provide strong leadership. Through these moves it has shown a feeling for what Heckscher once said was government's primary responsibility: "to keep its own house with a sense of beauty and fitness."

The recent efforts and attitudes indicate that politicians are indeed aware of a growing public desire for fuller federal participation in the arts—an awareness of what Sen. Williams has called "a hunger in the land for the kind of noble environment that this country is fully capable of creating."

Hopefully, this hunger will soon be manifested in further moves—by the legislative as well as the executive branch—toward vigorous and imaginative participation in the nation's cultural affairs.







## THE AIR ACADEMY CHAPEL — A CRITICAL APPRAISAL

As a national religious monument, crowning the largest assemblage of serious modern architecture yet commissioned by the federal government, and as a unique expression of the democratic ethos accommodating Protestant, Roman Catholic, and Jew within a single enclosure, the Air Academy Chapel was bound to be one of the most meaningful American buildings of its time. That its meanings might be spurious—that it might be not merely an architectural failure but a social and spiritual fiasco—was of course widely foreseen.

The completed chapel, I am sorry to report, proves these forebodings to have been painfully accurate. What could not have been anticipated, however, was the degree to which the finished building, laden with Gothic reminiscence and ravaged internally by the official taste of the clergy and the Air Force, exposes certain grave weaknesses of both national purpose and native art. This tabernacle of aluminum and glass, raised up in the name of the American people with such pride before Colorado's awesome Rampart Range, is in truth our first militant monument to Mass Cult.

It should be noted in fairness to the distinguished architects (who a short distance away created the superb cadet dining hall), that the entire contemporary movement, and not Skidmore, Owings & Merrill alone, has found the challenge of religious architecture infernally vexing in a rationalistic, technico-scientific age.

Can it be the last major structure of its kind? Except to the "God is my copilot" school of theology, the notion of divine intervention in very worldly affairs—for example, thermonuclear warfare—no longer carries much weight. For this reason alone the choice of the chapel as the dominant focal structure of the Academy, even if it was not the architects' choice, is open to serious question. If the Academy is purportedly an intellectual as well as a military bastion of the humanistic West, a magnificent library symbolic of limitless rational inquiry (instead of the paltry book room hidden in a neutral academic structure) might have been a more appropriate solution to the problem. Or the tiny (but trimly forceful) Academy planetarium might have been moved from its present peripheral site, and incorporated with a monumental center of cosmological studies.

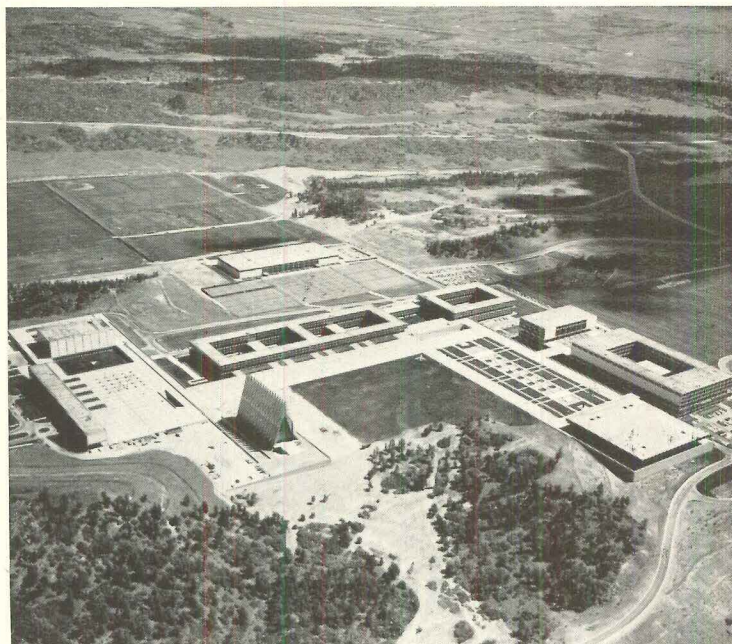
It is not altogether fanciful to wonder what equivalent to the chapel, if any, exists at the atheistic Soviet academy where cosmonauts are trained—cosmonauts who "did not see God" on their circuits of the earth. A totemistic intercontinental missile, capped with an indigenous Russian onion dome, might in fact be comparable to the chapel's great tetrahedral frames,

which have been properly likened to a row of upended, swept-wing fighters, but nevertheless also manage to appear—quite suddenly, miles from the highway across the tremendous landscape—as a futuristic, shining vision of high Gothic romance.

The building's pictorialism thus identifies it immediately. If a landmark was wanted, in a setting of such sweeping natural grandeur that all human ambition is reduced to presumption, the architects certainly achieved one. Against the formidable background of the front range of the Rockies, the chapel succeeds in registering a thinly strident, silvery note amidst dark, massive harmonies. But there is no indication of scale: it could be 100, or 1,000, feet high.

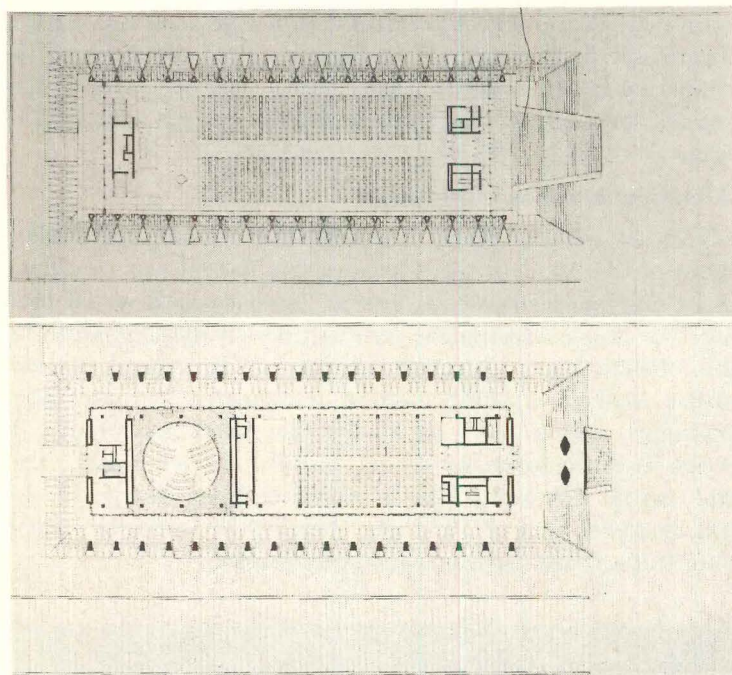
### **A brittle, birdlike focal shape**

Here is not the place to discuss the overall site development of the Academy, but because the chapel was conceived as its unifying element—a "special" shape which would bind together the vast rectilinear composition—it must be said that this objective was not really achieved. The chapel presides rather weakly, nervously, almost femininely, over the other buildings, which have an undeniable hard masculinity. It seems to flutter over the whole, birdlike enough, with a certain brittle delicacy. This is a tall building, but it is also unmistakably hollow and light, perched on seemingly small (but in fact half-buried) concrete buttresses.

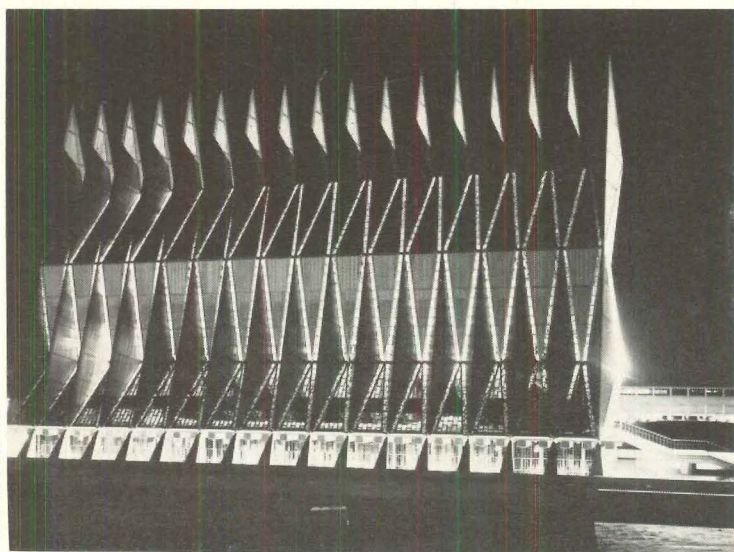


PHOTOS: STEWARTS





Upper level (top) is Protestant chapel; below are Catholic, Jewish



Viewed on axis from the observation platform beside the approach road, the chapel's place in the Academy is clear. Yet as the road bends away and the chapel is lost from sight behind the administration building and comes gradually into view again, it seems forlornly alone, feathery in its lightness, and surprisingly tall now, and—again surprisingly—with its back turned to the vast piazza on which the blue-clad cadets drill (photo, right).

There is nothing to do but walk, like an ant on graph paper, to the main façade on the south. This is an environment crushing to the individual on foot. Perhaps it is part of the annealing process of cadet training, but to the free civilian this makes for a forbidding approach to a building that, after all, is supposed to offer spiritual solace. A plaza of extreme coldness does little to dispel this sensation. Equally cold is the finely drawn, but thinly executed, formal staircase which leads upward to the chapel's bank of anodized aluminum entrance doors.

Yet now the immense tetrahedral members at last come into their own to serve as an enclosing portal. The basically triangular form, bent inward in a slightly weak-kneed effect, frames not only the entrance, but the expanse of glass above, in the building's first—and perhaps only—display of full architectural command.

#### **Picture of a structural system under control**

With the staircase broadly masking the concrete lower chapel, only the bright metallic superstructure counts. Here its proportions are much more satisfactory than in the troubling side elevations (lower photo) which zigzag uncertainly upward from their trite underpinnings in a succession of two-dimensional surfaces which do not coalesce into a coherent volumetric form.

On the end façade, however, the tetrahedral concept does not seem a fortuitous neo-Gothic stroke, but the controlled realization of a structural system: a fact, not a picture. There is the promise of a logically organized space within, and perhaps more.

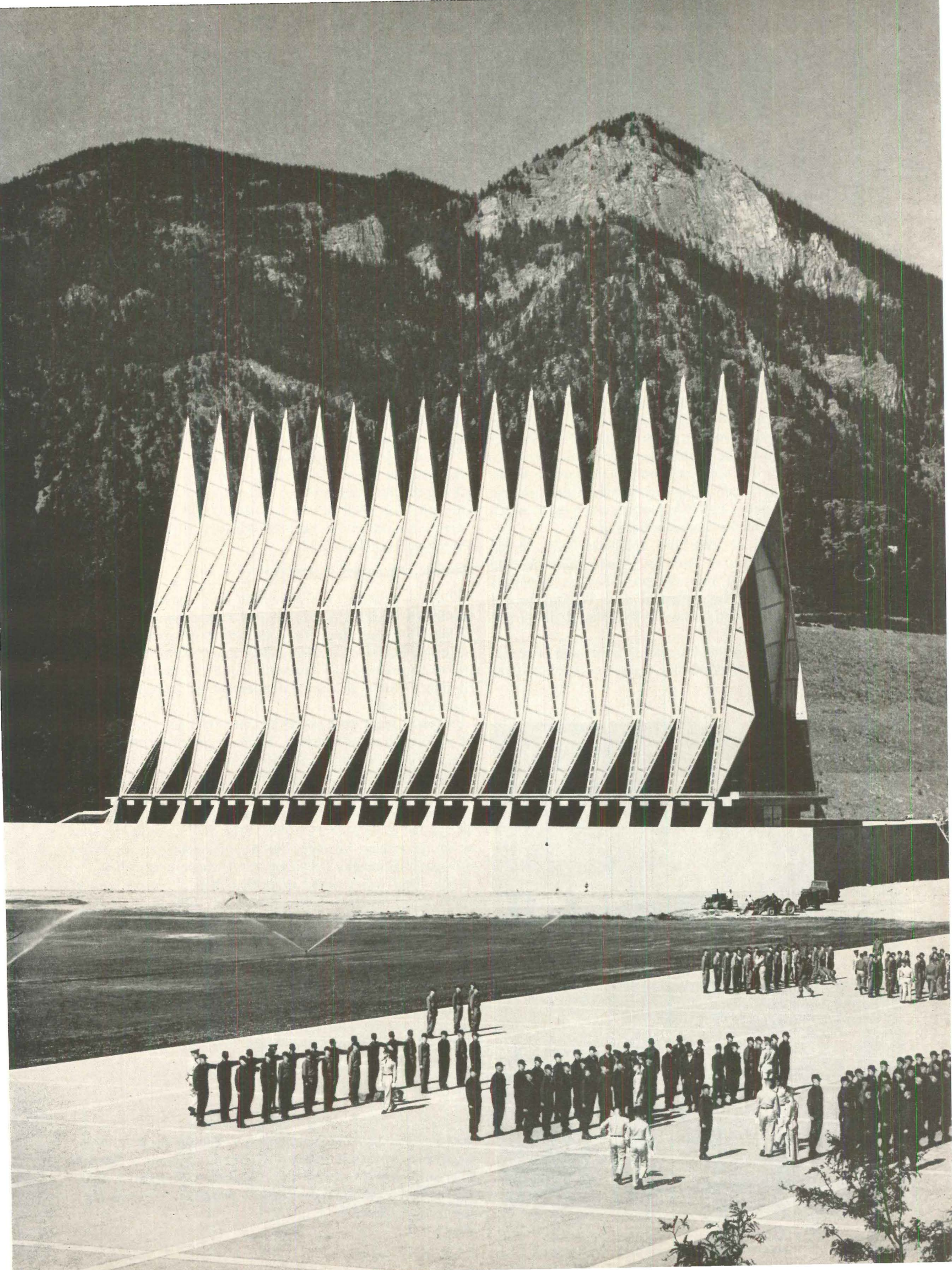
Alas, after the dark and cramped vestibule is negotiated, the big Protestant nave is a severe disappointment.

This is unmistakably a high church, liturgically and spatially—overwhelmingly Episcopal (if not papal) in its premise. An Anglican nave should rise in a single, supremely confident impulse. Yet midway to the apex, the structure hesitates, then leans oppressively inward. If the exterior appeared knock kneed and pigeon toed, the interior suggests arms timidly lifted, then inexplicably drawn back, with the elbows curiously bent in.

Would not the architects have achieved a more impressive space simply by replacing the unwieldy tetrahedrons with straightforward A-frames? Surely such a substitution would have made no difference at the peak of the room, which could have been crossed by a traditional ridgepole to give the same linear effect. For the uppermost surge of the tetrahedrons, clamoring for applause on the exterior, receives no expression whatever within.

Still one more Gothic note—again perhaps inadvertent,







but equally unfortunate—appears in the suggestion of columnless aisles beneath the inward-leaning frame. At the sides of the room the floor level drops (for no reason that is evident below) to railed-off areas which will be blazoned with memorial plaques. But this motive is weak, for the central volume seems merely to spill downward meaninglessly here, whereas an unbroken floor plane would have resulted in a decisive juncture with the descending planes of glass.

#### **Hollywood furnishings and Easter-egg glass**

Of this glass, the less said the better. Two varieties are juxtaposed, and they are hopelessly at odds: 1) smoke-colored, sun-resistant windows which grievously distort the natural colors of magnificent mountain scenery; and 2) decorative borders of—here come the Middle Ages again—stained glass that should have been sent to some confectionery where Easter eggs are a specialty. Have we not had enough of these cloying yellows, sickening pinks, and vile purples and violets which are a travesty of the medieval glassmaker's art?

In their selection of glass the architects have verged disastrously on the taste of the clergy, who must be held responsible for the final ruin of this otherwise imperfect room by the imminent installation of altar furnishings and other embellishments which belong to the realm of Hollywood Biblical films.

In this crucial matter the Protestants have been outdone, if that is the word, by the Catholics on the lower level: never

have I seen stations of the cross to rival the sheer and utterly unselfconscious vulgarity of these crude pastiches. These trappings were reportedly approved, and in some cases donated, by particularly eminent members of the American hierarchy.

Be this as it may, the Catholics have unquestionably obtained the finer room. Here SOM was faced with the objective problem of supporting the subjective upper church; the great transverse girders of prestressed concrete splendidly express the distribution of forces flowing through them, and downward to the resolute colonnade. The oblong space thus created is calm but stirring, marred only by the excessively narrow side aisles, which, as in the church above, are meaninglessly lighted through colored glass, in this case grossly set in cast concrete (photo left).

The tiny Jewish chapel—a glazed circular enclosure within a rectangular space—fills the rest of the subsidiary level, completing the distribution of cults according to current numerical strength. This room accommodates 100 Jewish cadets, compared with 500 in the Catholic chapel, and 900 in the great Protestant room overhead.

#### **Denied: the potential grandeur of a task**

There is nothing to indicate that Jews worship here except the heavily stylized ornaments and fixtures, with their spiky Hebrew lettering (dramatized, as in the other rooms, by rather theatrical lighting). In this single instance SOM retained control of decoration, and the result is superior, but not superior enough to make this space fundamentally more meaningful than the others.

Surely a more positive distinction could have been drawn, in valid architectonic terms, between these ancient yet still vigorous cults, if only the architects had not denied the potential grandeur of their task, as they denied the actual grandeur of the surrounding country.

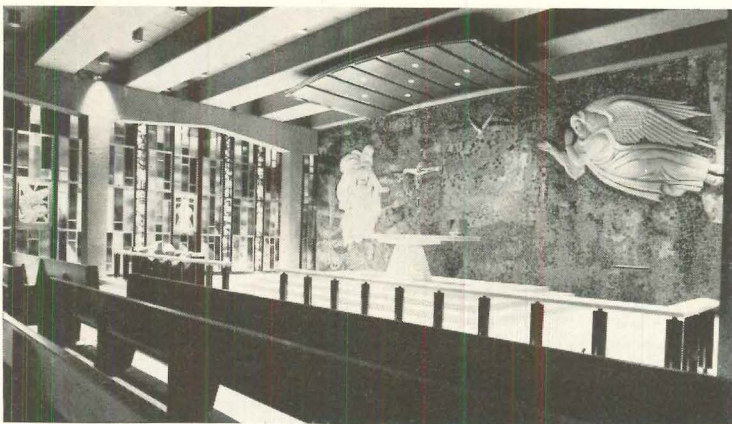
What was that task? At the very least it was to analyze the specific contemporary needs of the different religions, and to interpret them uncompromisingly according to structural and spatial principles belonging to the modern age alone.

This ideal was reached more than half a century ago in Frank Lloyd Wright's Unity Temple of 1906. It is the vital home of a living American religion, emphasizing the essential oneness of things, as well as their ineffable mystery: a form at once uniquely original yet universal, of its own time yet ultimately timeless.

Unity Temple attempted to answer the question of where we are going, as a people and nation, and why, under the aspect of eternity. This is the supreme question the architects of the Air Academy Chapel did not dare even to ask.

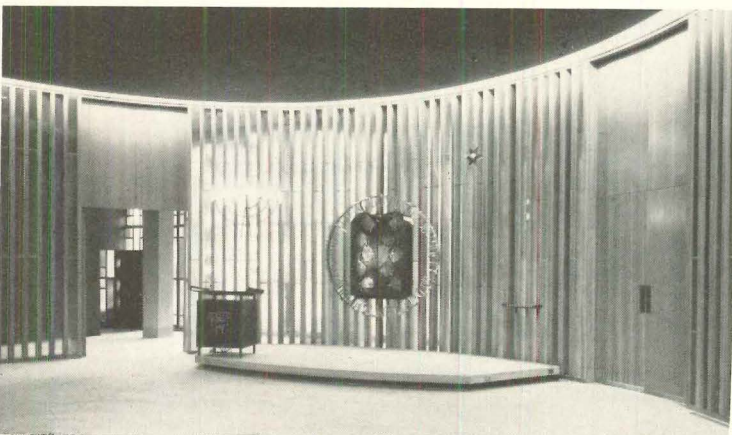
CHAPEL, U.S. AIR FORCE ACADEMY, Colorado Springs, Colo. ARCHITECTS AND ENGINEERS: Skidmore, Owings & Merrill (Chicago). CONSULTANTS: Bolt, Beranek & Newman (acoustical), Walter Holtkamp (organ). GENERAL CONTRACTOR: Robert E. McKee, Inc.

ALEX LANGLEY—TIME



Above, the 500-seat Catholic chapel; below, small synagogue for 100

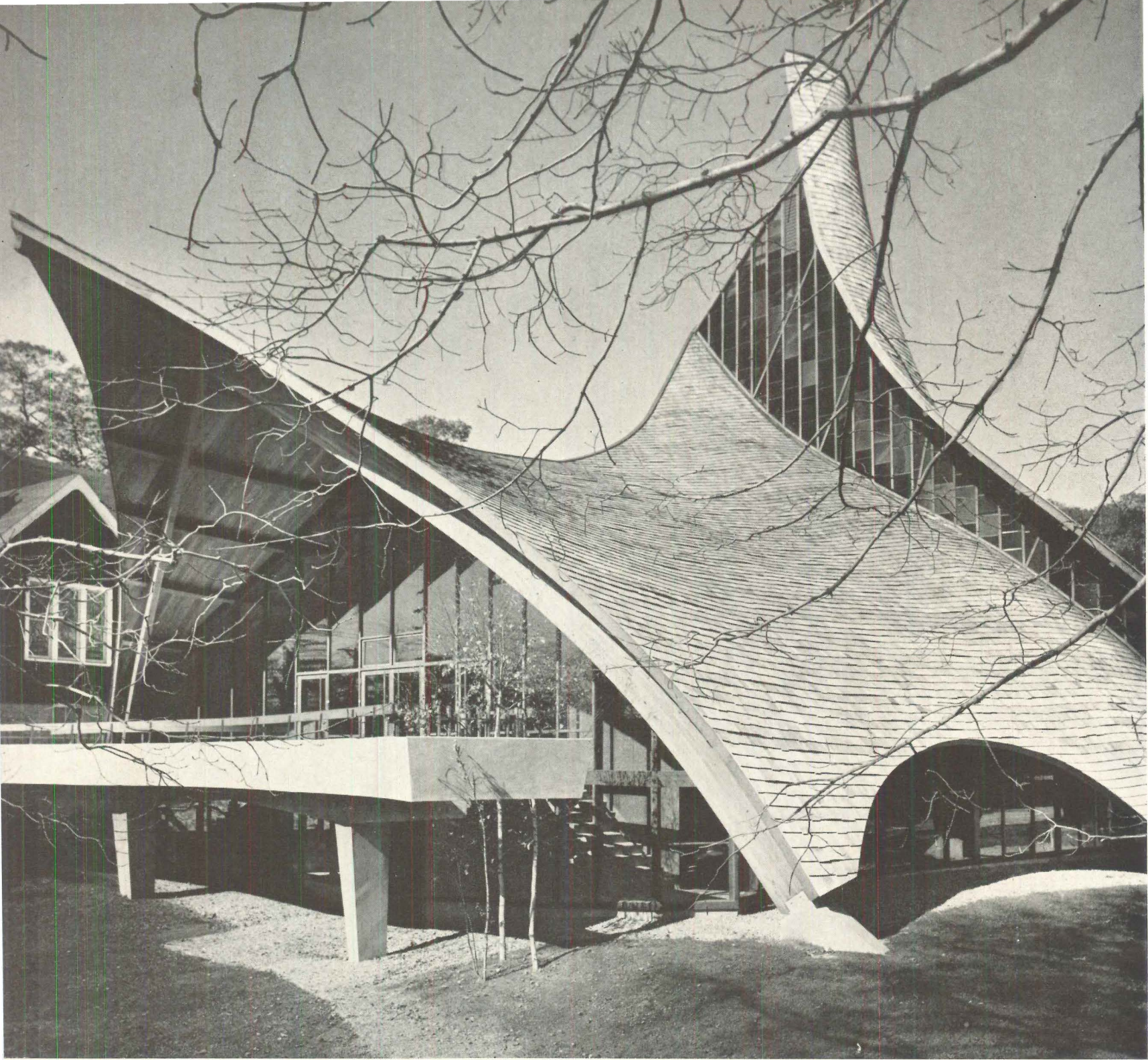
STEWARTS











## MOVING TENT OF WORSHIP

The shingled shape shown in motion on these pages has been referred to by many good-naturedly irreverent names, from "wrap-around religion" to the "Rowayton Twist." (One matron wore it to a costume party, and no one had to ask.)

But if the members of the new United Church of Rowayton, Conn., are tiring of the banter, they are not tiring of their church. Perhaps one reason is that it reflects, in its own way and for the moment, both today's unbound approach to religion, and at the same time a serious, and largely successful, attempt to bring all kinds of people together with God.

Of course many in this pretty New England exurb of New York would have preferred yet another prim white spire. But parishioners of the United Church—an amalgam of Con-

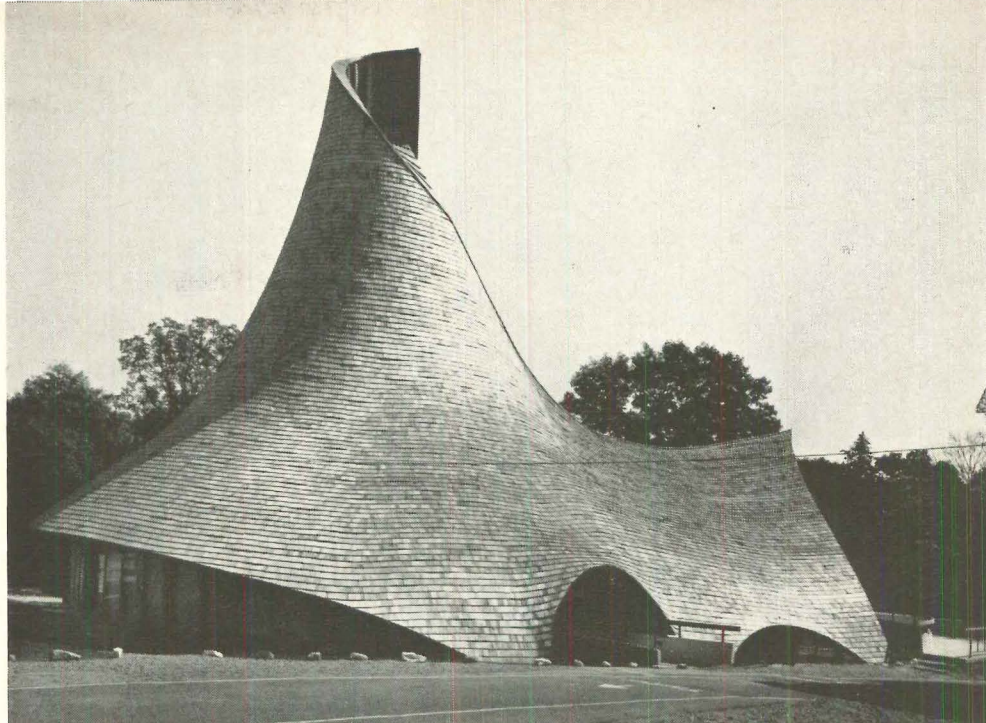
gregationalists, Baptists, and others led by a young Methodist minister—felt that their house, like their congregation, should make a fresh start as "part of the world today." A 12-man building committee ("four traditionalists, four modernists, and four in between") met frequently and studiously. By the time their chosen architect, Joseph Salerno, had shaped his clay models around their frank and simple program, the subject had been discussed openly for a year and the design passed 174 to 14 (the ladies club mounted a counteroffensive which died for lack of support).

The result is a complex, continuous surface of laminated fir bents, fir decking, and cedar shakes. A welcoming glass wall stands behind an open-armed entrance porch (above), and the roof wraps up 90 feet to form its own expressively unfinished belfry above a curve of bright-colored glass.

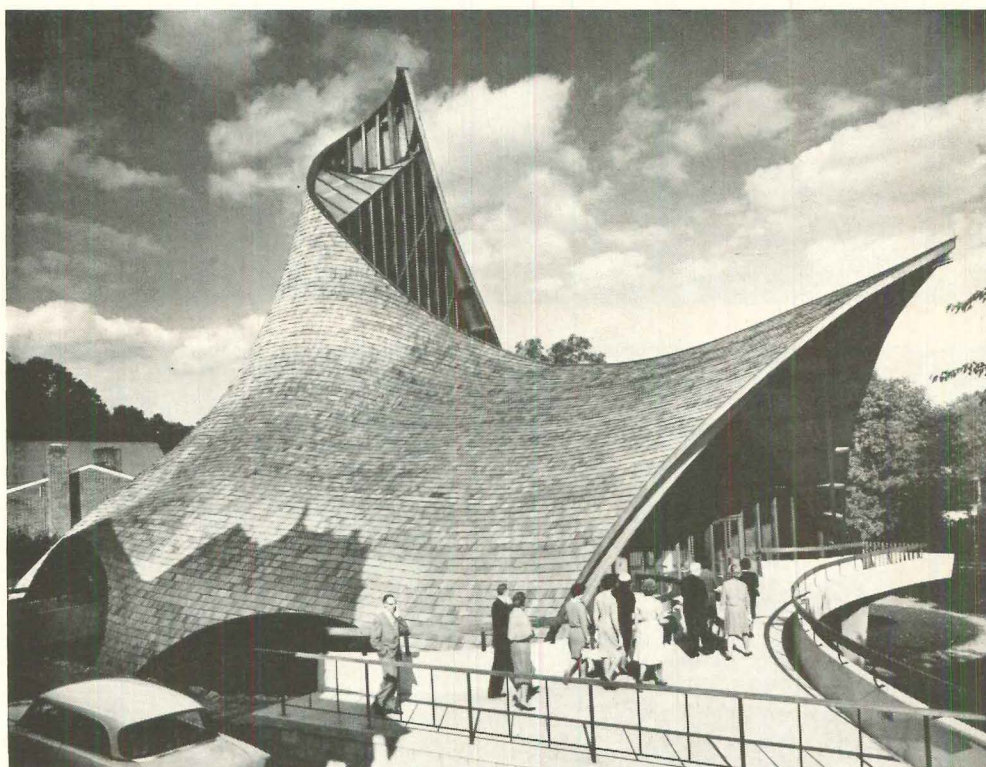




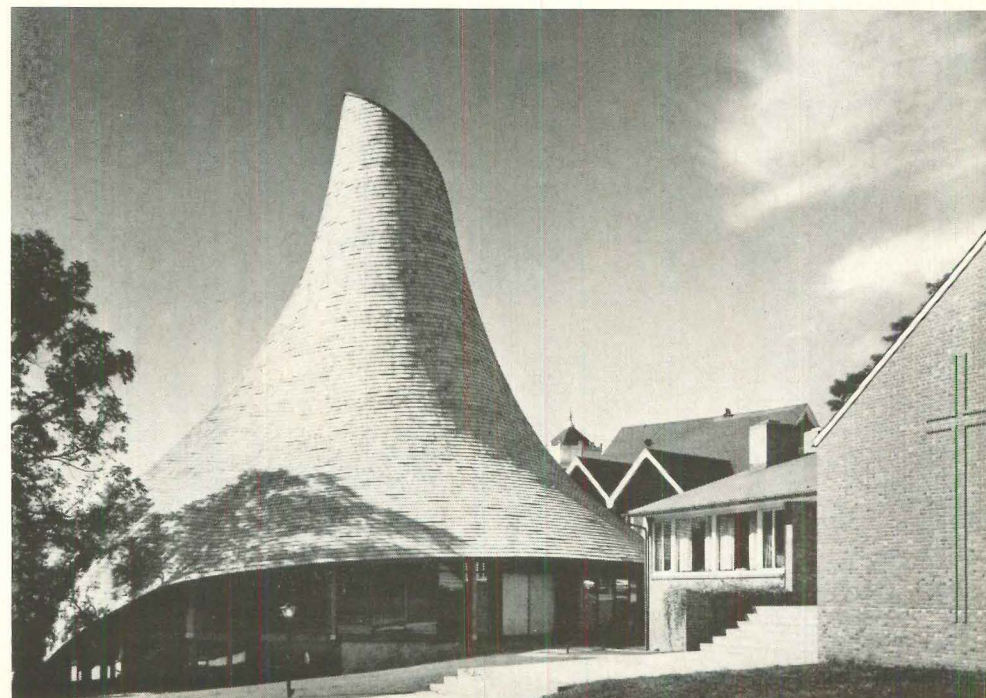
PHOTOS: P. E. GUERRERO



*On one side, the warmly shingled coverlet is lifted in an entrance arch reached across a bridge*



*Above, the porch. Below, the old church framed by the new—and a parish hall built in 1954*



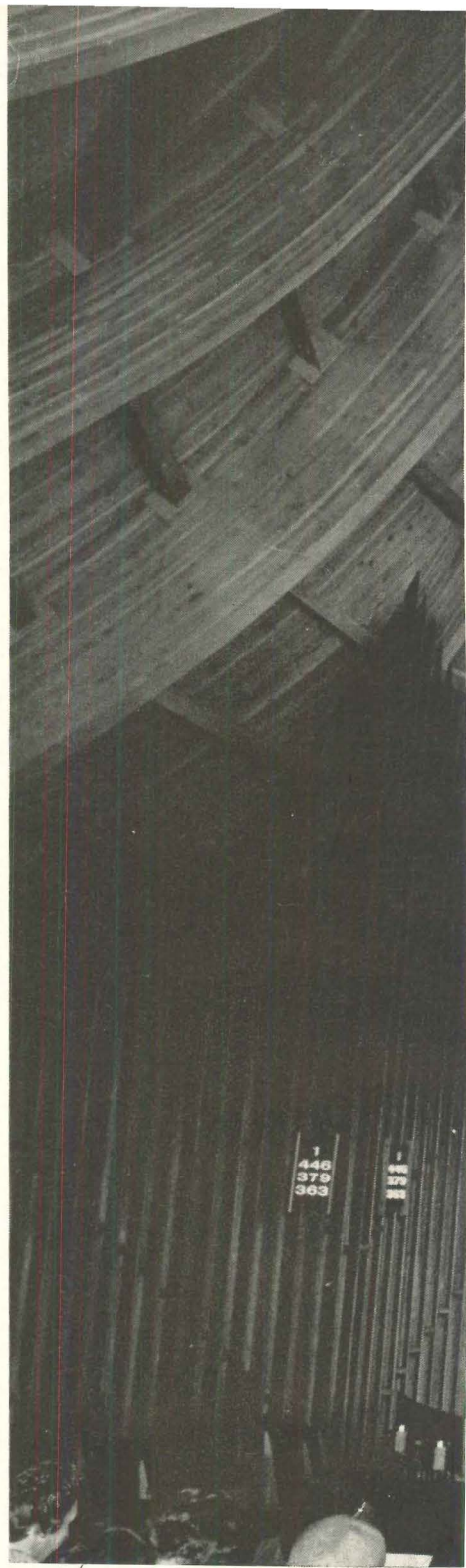
#### FACTS AND FIGURES

United Church of Rowayton, Conn.  
Architect: Joseph Salerno (Richard T. Kasal, job captain). Engineers: Wayman C. Wing (structural), Jaros, Baum & Bolles (mechanical). General contractor: Thomas J. Riordan, Inc.

Capacity: 265 persons in nave, 30 in choir-chapel, plus temporary chairs in narthex. Basement will have meeting room, children's chapel, four classrooms, a pastor's study.

Building area: 10,000 square feet (5,000 square feet on each level). Costs: construction, \$180,000; furnishings and equipment, \$20,000 (including fees of 7.35 per cent).



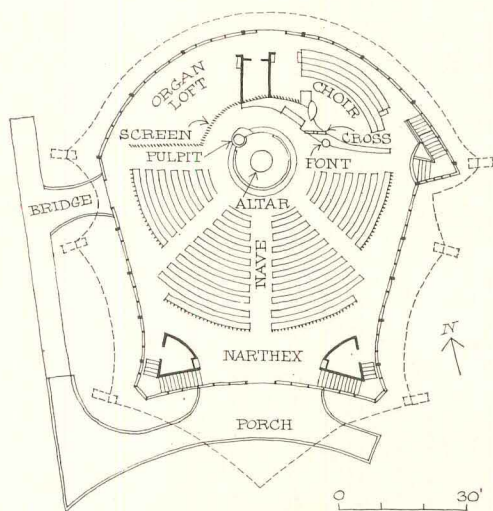


God's morning light, colored by panes of glass (top left), splashes in through the skylight and onto the north wall (above). The round-tent feeling of unity and aspiration is strong inside: oiled mahogany pews circle the altar dias; the farthest is only 37 feet back, and the 300-seat church does not seem empty with 70 people, or 175. In front of the wood-slat organ screen, which rises like the church, is an asymmetric trinity: a hooded pulpit of troweled concrete; a cross of barn timbers; and the altar, a redwood round founded solidly on a rock.





PHOTOS: P. E. GUERRERO







## RUGGED FINNISH CHURCH

Five years ago, an arsonist destroyed the 180-year-old church of Orivesi, Finland. Only the tower remained, a darkly splendid anachronism in the chill landscape. The congregation decided to hold an invitational architectural competition for a new church. The winning design, by the husband and wife team of Kaija and Heikki Siren, has now been realized in a building of elemental strength and enclosure.

The new church is set apart from the venerable tower in space, time, and concept, but there is no conflict between the two. In its unusual plan and form, in its almost total absence of superficial decoration, this is a decidedly modern church, even a venturesome one. Yet it is strong and solid rather than assertive, a composition of such simplicity and

originality that it is lifted above the mode of any particular period of religious architecture.

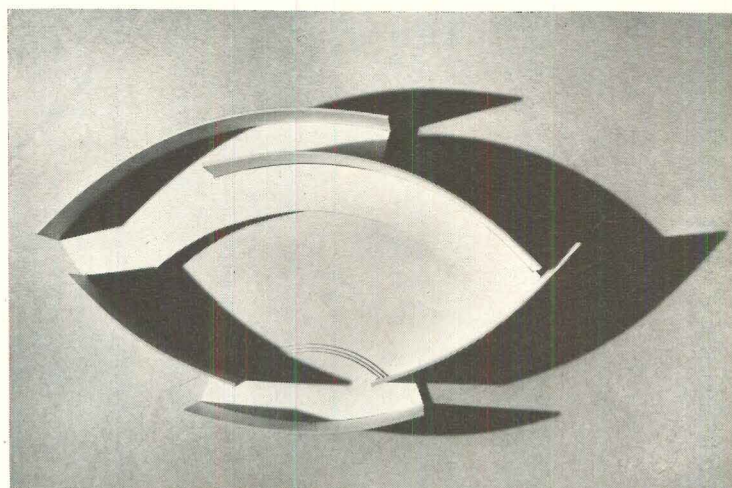
The basic elements of this composition are five gently sweeping, overlapping brick arcs, separated by strips of glass. The way the arcs come together is shown most clearly in the diagrammatic model at right: four of them create the elliptical shape of the church, and the fifth is set back behind the altar. They never quite touch, however, and the tall voids between them are glazed. Natural light is thus thrown dramatically against the curving brick planes, reaching its greatest intensity at the boldly understated altar (overleaf). Light also plays against the deep beams of the ceiling from a shallow window just beneath the roof, continuously rimming the building's perimeter except at the plain brick backdrop of the altar wall (seen at far right in the photograph above).





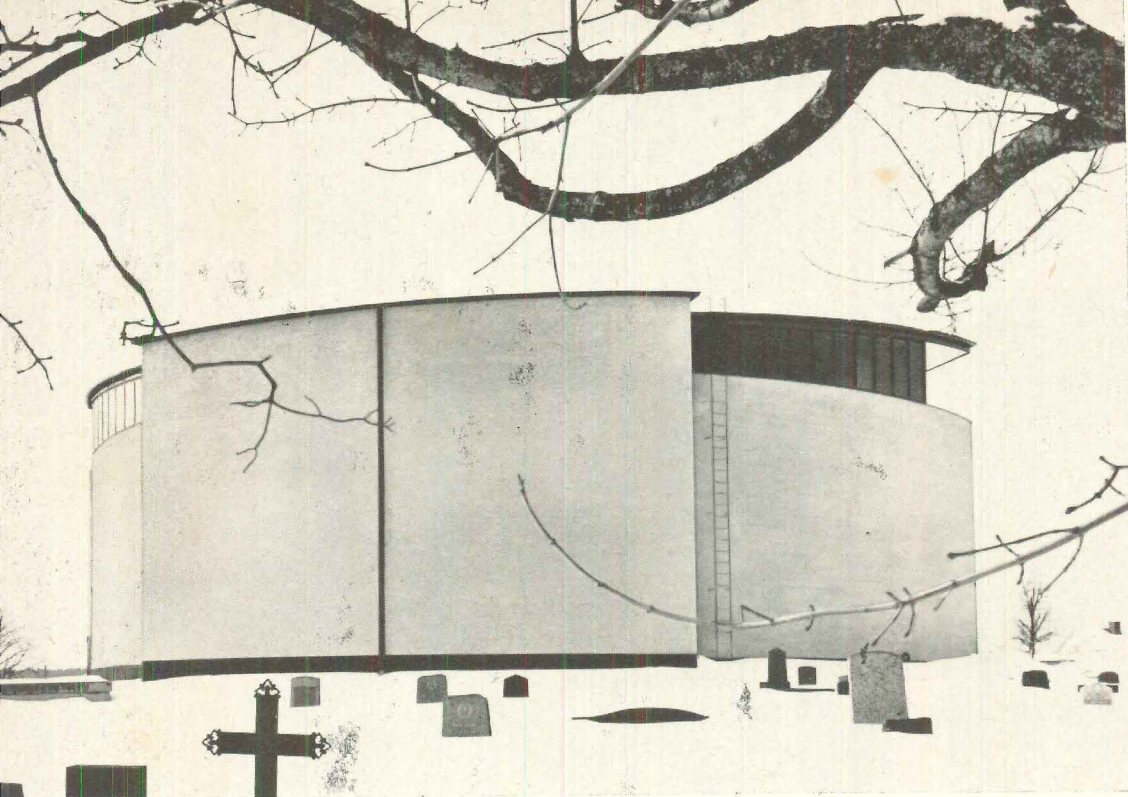
*Sharply outlined against the winter sky, Orivesi's eighteenth-century church tower and its new companion rise with equal appropriateness behind the village cemetery.*

*The Sirens used the rough model shown at right as their competition entry. The altar is at the bottom of the photo, the entrance at the top, where two arcs overlap.*

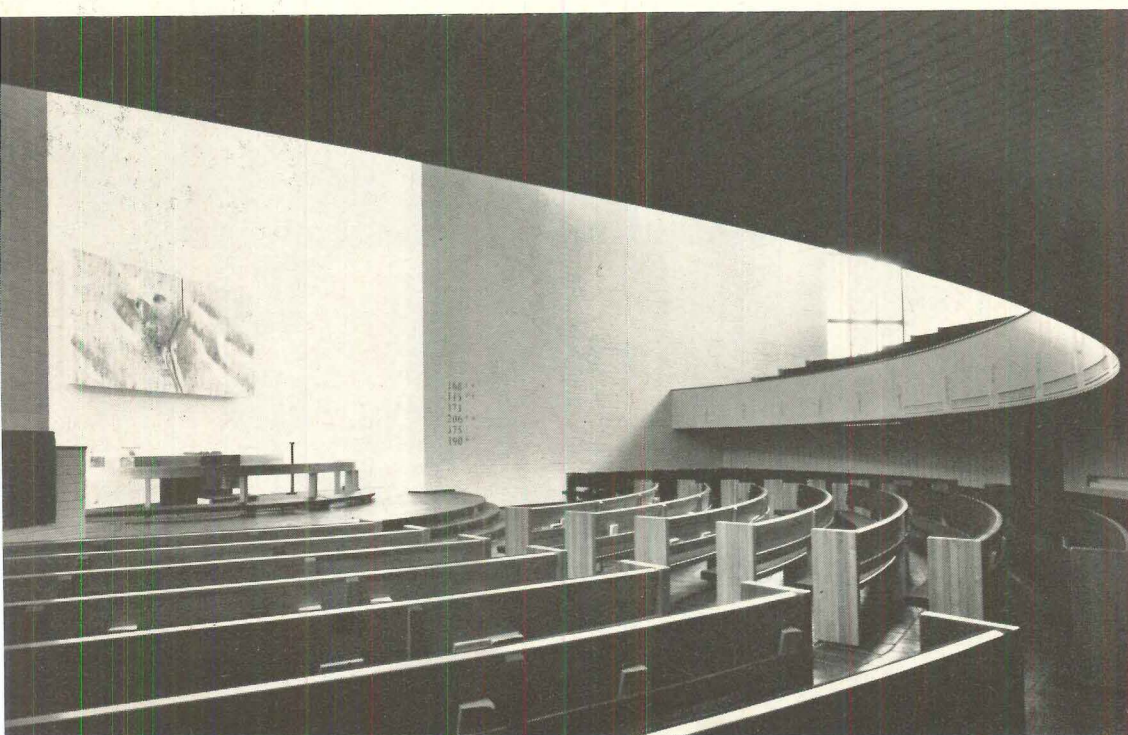


PHOTOS: PIETINEN

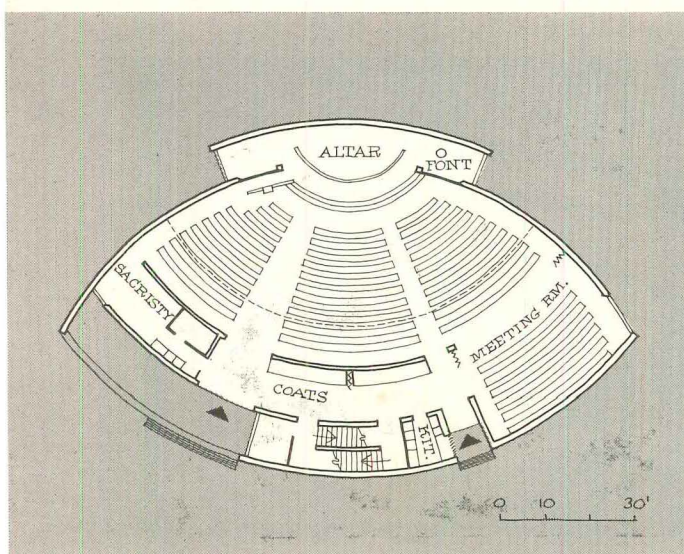




The five enveloping walls of the church are clearly articulated on the exterior. Except for the altar wall (center in photo at left), they are topped by a continuous band of glass just under the roof.



The choice of the ellipse as the church's form was far from a designer's caprice; it brings each of the plain, carefully crafted wood pews within close sight and sound of the altar (see plan and photos left). The pews were designed by Architect Lars Gestranus.



The drama of the sanctuary is heightened by its appointments, whose characteristics are, again, simplicity and power. The altar (right), placed on a podium three steps up from the sanctuary floor, is a thick, boat-shaped slab of wood with a massive block for its base. The only decorations are two graceful silver candlesticks designed by Bertel Gardberg. Behind them, against the bright brick wall, is a severely abstract wood relief by Sculptor Kain Topper, depicting the hill of Golgotha.

PHOTOS: PIETINEN





109 5  
190 3  
510 5  
209 5  
488 4  
318 3  
485 1  
489 3



## HOTEL BUILDING: THE BOOM THAT REFUSES TO BUST

It is almost a cliché to say that hotels in most cities are overbuilt. Yet despite the continuing predictions of imminent disaster for the nation's seventh-largest industry, U.S. hotel builders just keep rolling merrily along, throwing up increasingly luxurious accommodations geared to the demands of an increasingly cosmopolitan market. And this activity is not confined to resort areas (see pages 91-99); it continues to proliferate on highways, near airports, and in central urban areas. Overall, it appears that 1962 will be the second-best year on record for hotel building—about \$540 million worth, plus \$190 million for motor hotels, and \$50 million in additions and renovations. Moreover, signs point to a volume of construction nearly this high in 1963. This would mean that the two years together will be far and away the rosiest hotel-building period in the nation's history, exceeding even the great boom of the 1920s.

Some say the reason hotel building continues so strong is that hotelmen are schizoid—they talk conservatively in terms of hotel operations, but act considerably less cautiously in their role as real estate entrepreneurs. This would seem pertinent given the recent experiences of the two largest hotel operators, Hilton Hotels Corp. and Sheraton Corp. Hilton expresses great doubt about the future of new hotels in most large U.S. cities yet is happily developing two huge facilities, in Washington and New York, and has other new structures underway in Kansas City, Portland, Ore., and in San Francisco. (Significantly, however, ten of the 15 hotels that Hilton is currently building or has just opened are overseas.)

For its part, Sheraton has said that it has "trimmed sail quite drastically in recent months," yet is pleased by the initial performance of its luxuriously appointed, new 450-room motor hotel recently opened in midtown Manhattan. Sheraton has also finished another 300-room motel near LaGuardia Airport, recently opened a 550-room hotel in Houston, and has a new downtown hotel (with free parking) in Minneapolis.

What makes all this building activity seem somewhat out of place is the fact that the hotel industry as a whole has been suffering through its worst operating troubles since the 1930s. Last year, for instance, overall occupancy for big-city hotels fell to 63 per cent, the lowest since long before World War II, and is declining further this year, probably to about 61 per cent. More important, net operating profits slumped more than 5 per cent in 1961 to levels which have put many urban hotels on extremely shaky ground. The profit decline makes it evident that hotel operators have not been able to hike

room rates fast enough to keep up with the drop in occupancy (see charts, page 89).

There is, indeed, good cause for alarm in the statistics of the hotelkeeping business. Hotel Accountants Harris, Kerr, Forster & Co. report that occupancy for 600 selected U.S. hotels last year was the lowest since 1939, and this year it will be lower. About the only things on the rise are expenses, building costs—and new hotels.

### The growing fight for the shrinking hotel market

Nowhere is the anomaly of new building in a seemingly sated market more pointed than in New York City. There had been no new space built there for 30 years when Hotelman Laurence Tisch put up the Summit on the East Side late last year, and other entrepreneurs started buying up cheaper West Side footage for flossy motor hotels. Within four years, some 9,000 new rooms will have been thrown on the New York market, and some observers think this is too much. One of these is Willard E. Dodd, president of Knott Hotels Corp., who says, "If one were to judge from the experience of many hotels in the past six months, the unanimous opinion would be that New York City already has too many transient hotel rooms." Dodd adds that occupancies of new rooms will probably be high, at least through the 1964 World's Fair, but cannot vouch for what will happen afterward.

Dodd's pessimism is echoed by New York Central Vice President James O. Boisi, who points out that New York's occupancy rate of 75 per cent means an average of 20,000 vacant rooms. Boisi believes the new rooms "will achieve a rather high degree of success" but warns that "unless some prudent planning takes place, the measure of success of the new

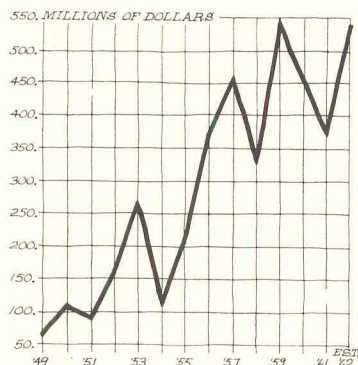
hotels will be the measure of failure of the older ones."

Boisi believes the older hotels must fight back, and, indeed, three of those built upon Central property in Manhattan are doing just that. The Roosevelt, Commodore, and Biltmore recently announced that they would pool their convention facilities to answer the challenge posed by the huge 2,000-room Americana and 2,135-room Hilton hotels, both of which have been planned with the convention and banquet-meeting business in mind.

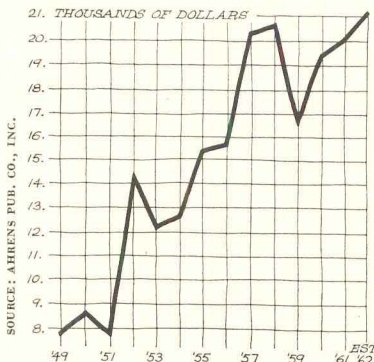
### The threat of a rate war

For many older hotels, the possibility of large-scale upgrading is questionable, given their shrinking market. Their operators see a flat cut in room rates—and usually in service as well—as the only way to compete, or at least to reach a broader chunk of customers. Hilton Hotels has already felt the pressure of what it calls "various forms of competition," including rate cutting, and acknowledges that this has been a factor in its occupancy decline and the commensurate drop in its profits to the lowest level since 1954, when it bought out the Statler chain. Hilton's biggest competitor, Sheraton, has already cut rates drastically in 19 cities with its new Sherwyn class of accommodations (a maximum of

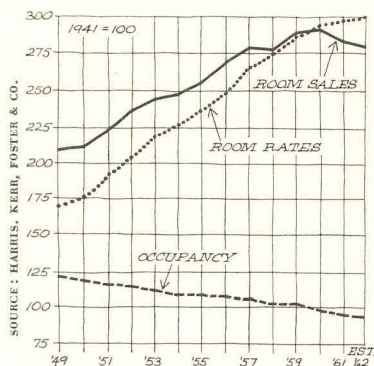




**HOTEL CONSTRUCTION** this year is expected to reach over \$540 million, second only to 1959's all-time high. This near-record volume comes despite . . .



**HIGH BUILDING COSTS**, which in 1962 were at a peak of \$21,253 per room for new hotels. This could be a limiting factor in the future, along with . . .



**SLUMPING OCCUPANCY** and room sales, both of which fell this year. While room rates were the highest on record, occupancy was the lowest since the 1930s.

\$5.75 has been established). These are so-called tourist-class rooms, and some of them are in the same hotels which still have first-class accommodations. This phase of Sheraton's new policy disturbs some hotelmen, who don't think it is good business to mix low-cost with luxury rooms and public facilities. Sheraton, for its part, hasn't yet had enough experience with the Sherwyn idea to know whether increased occupancies will offset lower room rates.

Sheraton's lowering of rates is not the only measure of its caution about future trends. In the 1962 annual report, President Ernest Henderson notes: "A number of new construction projects as well as certain major projected improvements, aggregating quite substantial sums, have been postponed awaiting a more favorable economic outlook."

#### An eye for opportunities

Despite these signs of retrenchment, Sheraton and Hilton are both keeping a sharp lookout for new opportunities. Hilton is currently concentrating its new building activities in other countries, and Sheraton seems increasingly enamored of the motor hotel. Sheraton has "motorized" 17 existing hotels, which, with its six new motor hotels, commits the company squarely to competing with motels. Sheraton is firmly sold on the downtown motor hotel (see FORUM, Aug. '60). As Senior Vice President Robert M. Brush says, "hotelmen don't have to choose between licking or joining motels—we can adapt to some of their desirable features and, more important, improve our own services." After some study, Brush says Sheraton is convinced that "there is a growing migration back to the cities from the out-

lying areas, and that in-city hotels imaginatively rehabilitated can recapture much of the trade lost to suburban motels by offering the same conveniences plus location in the heart of town."

The downtown motor hotel is one of the biggest question marks in the whole hotel picture. As Allen George of Harris, Kerr, Forster says, "We still don't know the limits of the automobile market in the city." George has been a consistent pleader for more conservatism in the development of properties. He believes that the new, high-priced hotels, such as the Americana and Hilton in New York, will precipitate some rate shopping. But he also foresees increasing demand for first-class hotel space in what he calls "terminal cities," such as New York, Chicago, San Francisco, and Washington, while other smaller cities will have tougher sledding. "After all," George says, "you can't increase the number of hotel units by 42 per cent, as we have in postwar years, and have the number of occupied units rise by only 11 per cent, and not expect trouble somewhere."

#### Hot and cold cities

Of course, one of the misleading features of overall building and occupancy figures is that they don't tell you very much about any individual city's prospects. It is unlikely, for instance, that the huge volume of new space under construction in New York would have been attempted if occupancy rates were as low as they are in Philadelphia, New Orleans, Atlanta, or even Chicago. There is no rush to build new space in any of those cities, although Chicago is undergoing a "boomlet" in motor-hotel space. Even that, however, has been sufficient to

cause a great deal of consternation. Chicago occupancy has declined from 80 per cent less than a decade ago to about 65 per cent this year. Experienced hotelmen are frankly worried about this drop and about the soundness of some of the new properties. "Most of these are built at high cost," one Chicagoan says, "and are being operated by people with little experience. . . . The city might have stood 3,000 or 4,000 new units, but 10,000 has driven occupancy levels way down—and some older properties out of business."

In Washington, on the other hand, occupancy has stayed over 75 per cent despite a husky building boom. The main reason is the traffic generated by the rapidly expanding business of the federal government, as well as the building of new trade-association headquarters.

At the same time, potential sites for new hotels in Pittsburgh, Boston, Norfolk, and Baltimore have gone begging until special inducements could be offered. In Baltimore, Hilton, despite reports it is committed, has not yet definitely decided to build a new hotel in Charles Center, the city's massive downtown urban renewal effort. One reason for caution may well be the city-wide occupancy rate of only 60 per cent. (Sheraton's motor hotel is the only in-town facility built since the 1930s, and its economic health is practically guaranteed by Johns Hopkins University, which backed the deal). Although the deal is not final, plans have called for a 530-room hotel, with the city providing funds for a parking garage (see Projects, page 51).

In Boston's Prudential Center, Sheraton had initially planned to build a hotel despite a generally



pallid economic picture, mostly because the city is Sheraton's home base. However, when it appeared that construction costs would run over \$20,000 per room, Sheraton bowed out and the gap was eventually filled by another Boston-based chain, Hotel Corp. of America.

Special inducements are often vital to get hotel builders interested in those cities where the economics are not strong. In Pittsburgh, for instance, Hilton built its hotel in the Golden Triangle only after Equitable Life Assurance Co. guaranteed a low-interest loan. The hotel has been far from a smash in a city where overall occupancy is only 58 per cent.

#### **It all depends . . .**

Thus, even where the economic picture may not be too bright, one of the chains or an independent builder might be persuaded to take the chance—if financing or land availability looked right. Practically every downtown urban renewal project has a hotel in its plans, but much

of this is wishful thinking. Both big chains are lukewarm on all but a handful of cities, and none of these projects would be likely to come under a renewal program.

Financing has been a key consideration in the building of new hotels, particularly since land and building costs have zoomed, and severe pinches have squeezed operating income. In fact, some hotelmen doubt that the present level of construction would be so high if it were not for a large supply of investment capital seeking an outlet. This is particularly true of real estate syndicates, which have been active in pressing for new, high-return investments. One of the few optimists on the New York hotel scene is Developer Marvin Kratter, who points out that "there is today more public and private money to finance new hotels—and more syndicates to buy them." Lately, however, there has been evidence that at least the large institutional investors are tightening up somewhat on their hotel and motel

loans, though the syndicates remain a prime booster of new projects.

#### **Trouble on the road**

While hotel building is strong in certain cities, and downtown motor hotels flourish, there are growing questions about the smaller highway motel. If competition is tough in the city, it has become savage on the road. At a recent motel conference, builders were warned anew that the mortality rate for badly planned motel space will accelerate now that most prime sites are gone. And smaller, older motels are sure to suffer as the large motel and hotel chains develop luxury motor hotels on land closer to downtown areas. This trend is sure to continue as long as the operating statistics for motor hotels show up so much better than those for hotels. Last year, for instance, while gross operating income for transient hotels declined 4.6 per cent, motor hotels showed an increase of 2.4 per cent. And motor-hotel occupancy actually rose by 1.1 per cent (to 72 per cent) while hotel occupancy dipped 3.7 per cent. On the cost side, motor hotels are cheaper than hotels, both to build (\$10,288 vs. \$21,253 per room) and to operate (\$1,932 vs. \$2,641 per room per year).

Motel or hotel, there is no doubt that the new facilities—particularly those with parking, pools, and other services—will attract business and enjoy higher-than-average occupancy, at least at first. With building and operating costs continuing to rise in the face of declining revenues, however, it is hard to see how the hotel-building boom can continue. But that's what they were saying five years ago. DAVID B. CARLSON.

*Flossiest of Manhattan's West Side motor hotels is the 400-room Sheraton*



ALEX LANGLEY—TIME





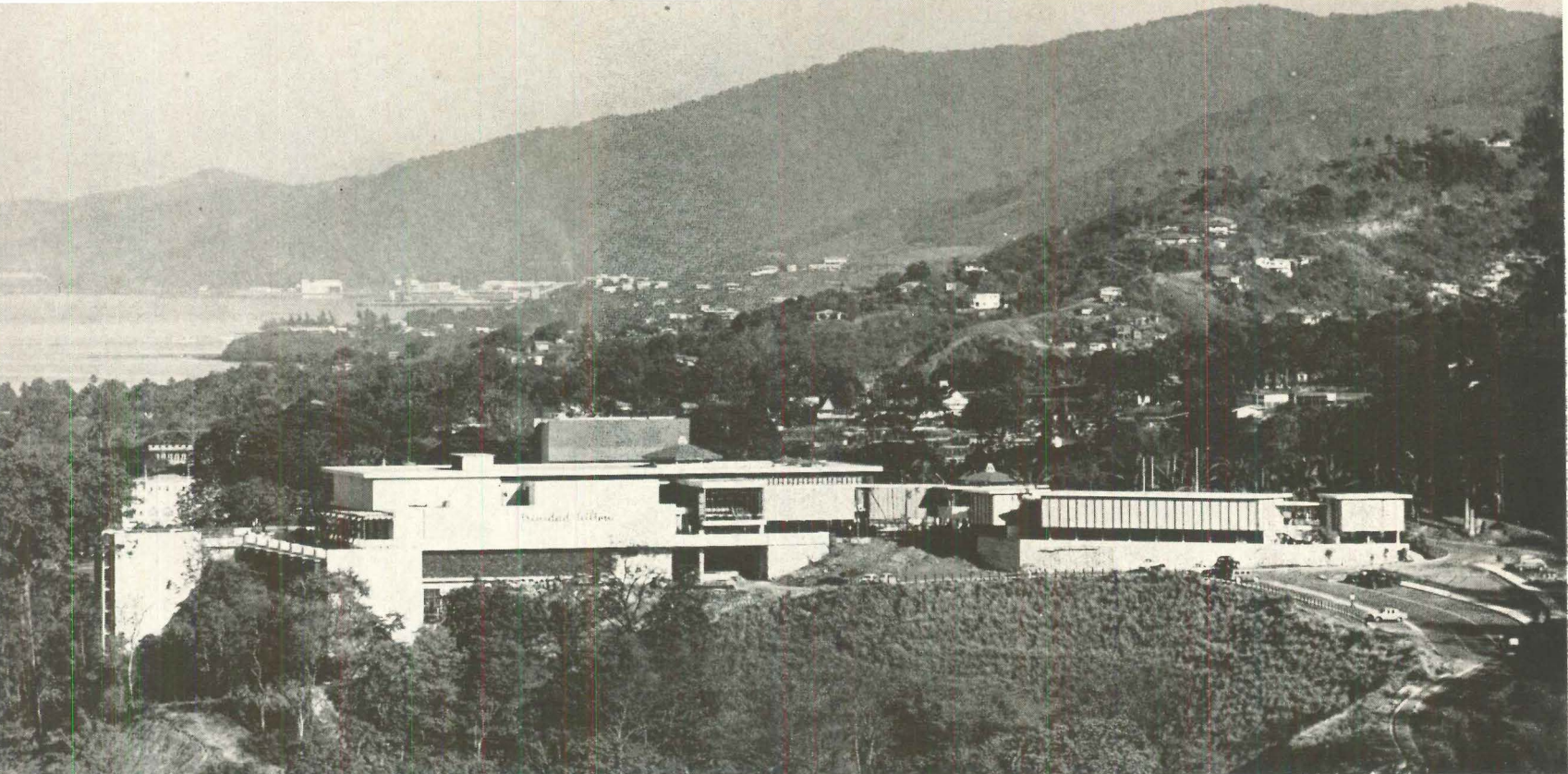
RALPH V. SOLE

## **BUILDING FOR VACATIONS**

While some may wonder how long the current hotel boom can last (see preceding pages), most architects and builders, and tourists in general, seem to have few qualms. New hotels, resort clubs, beach pavilions, and mountain lodges are sprouting happily across the U.S. and overseas, and jet flights are well filled taking customers to them.

One of the lush and more artfully designed of the big new resort hotels is the Trinidad Hilton—261 rooms with pools and restaurants balanced on a mountain slope (above and overleaf). The view of a blue Caribbean harbor from this line of latticed balconies is the kind that makes vacations worth writing home about, and new hotel sites worth finding.





## UPSIDE-DOWN HOTEL IN THE WEST INDIES

The site of the new Trinidad Hilton is straight out of a tourist's (or architect's) dream: 25 acres of lush, tropical greenery overlooking Port of Spain and the Caribbean beyond. The hotel complex has been carefully fitted into the contours of the mountain by Architects Warner, Burns, Toan & Lunde in an ingenious solution which takes advantage of the sweeping view without disrupting the natural topography.

By placing the swimming pools and public rooms at the top of the steep incline, and grouping guest rooms in descending floors down the hillside, the architects have created an "upside-down hotel." The result is what Architect Charles Warner describes as "a kind of environment rather than a building. . . . It has no architectural ego." This "ego-less" design also provides enormous flexibility for a hotel intended not only to accommodate the island's increasing number of conventions,

but also to provide a relaxed resort atmosphere for tourists escaping to the warm tropics.

The site itself helps to divide the hotel's formal spaces from the informal, the public areas from the private. From the entrance, reached by a road winding up to the top of the hill, only the two top floors are visible. These contain restaurants, private dining and meeting rooms, bars and ballroom, and an adjoining shopping arcade. With all 261 guest rooms hidden below the

crest of the hill, and two sculptured pools decorating the exterior, the hotel appears to be a large and luxurious country club.

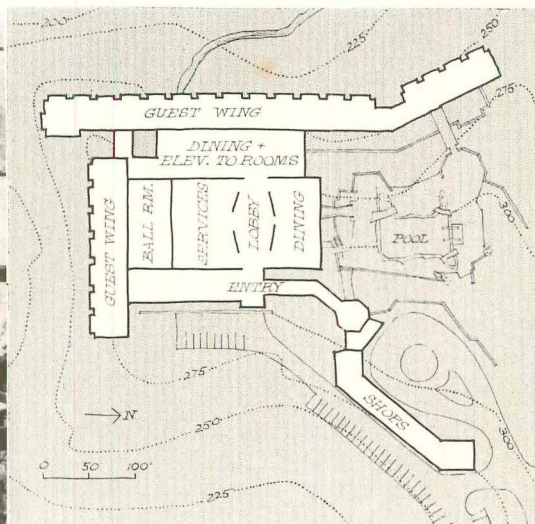
The major view is to the west, which would ordinarily present a difficult glare problem. But by setting the seven guest floors (with single-loaded corridors) into the side of the hill on bench-like spread footings, the architects insured the best view possible for each room, with treetops and ivy-planted trellises acting as natural sun screens.



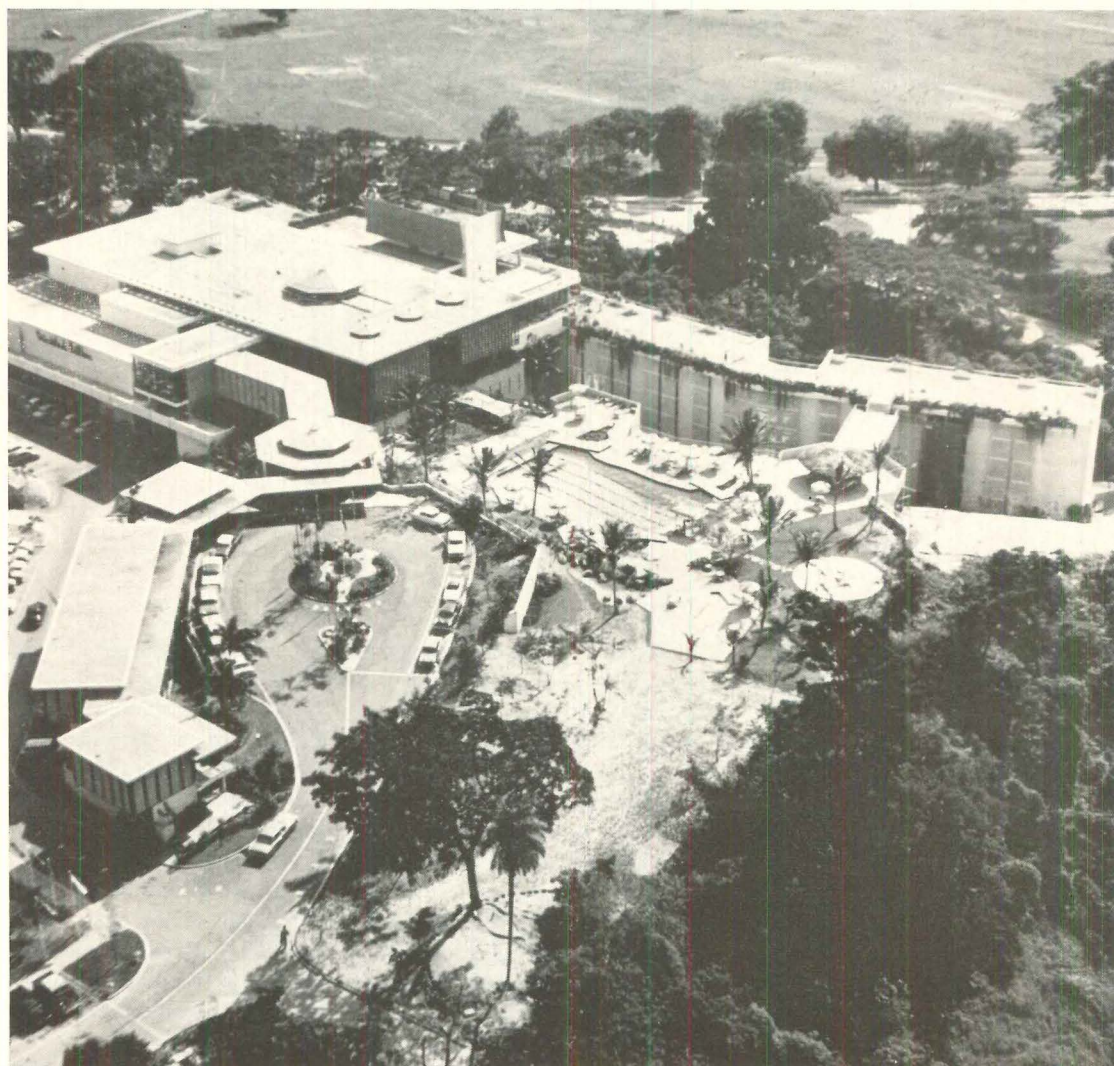
*A spacious, sunlit lobby (right) runs across the hotel's top floor. Light filters in through a glass wall looking down on the dining room (photo below), and through a skylight topped by a wooden clerestory roof. From here, four elevators descend to the guest rooms.*



*Center of informal living is the Pool Terrace Dining Room, a two-story, partially enclosed summer house. From tables under chandeliers with hanging ferns, diners overlook an outdoor dance floor.*



*A shopping arcade flanks one side of the driveway leading to the hotel. From an octagonal entrance pavilion, guests can go directly to the pools or follow a covered walkway leading to the lobby and public rooms on the top floor. Wooden bridges link the pool terrace to the hotel and to the guest wing (right).*



#### FACTS AND FIGURES

Trinidad Hilton Hotel, Port of Spain, Trinidad, West Indies. Owner: Government of Trinidad and Tobago. Operator: Hilton Hotels International.

Architects: Warner, Burns, Toan & Lunde, with Toro-Ferrer and W. H. Watkins & Partners. Engineers: Seelye, Stevenson, Value & Knecht (structural); Zumwalt & Vinter (mechanical). Landscape architect: Frederic B. Stresau. General contractors: Anglin-Norcross/Cubitts. Building area: 250,000 square feet. Total construction cost: \$7 million; about \$28 per square foot.





PHOTOS: ART HUPY

### TRIPLE A-FRAME FOR COLORADO SKIERS

Even the most successful skier's runs would pale without a convivial place to swap skiing yarns of an evening in an atmosphere of *gemütlichkeit*. So the owner of the Aspen Highlands Ski Lodge near Aspen, Colo., wisely decided to scrap his original plans for an economical but pedestrian prefab building and chose instead to spend a little more money on this lively design by Fredric Benedict.

Since the Highlands is located

in a new ski area in the Maroon Creek Valley, the architect and owner had a wide choice of possible sites. The one they selected in the valley meadow is on a low rise overlooking a small pond with superb views in all directions, surrounded by aspens, spruces, and firs. Architect Benedict describes the lodge's triple A-frame as "an interpretation of an unusual mountain at the head of Maroon Creek Valley called Maroon Bells. The three peaks or bells are quite architectural in shape

and have the appearance of supporting one another."

Inside, the Highlands has two dining rooms, a cafeteria, small bar, *bierstube* lounge, and ski offices on the first floor. A night club and bar are on a mezzanine level (top photo, opposite).

By using a 24-foot-high A-frame for the main dining area, the architect has insured a valley-to-mountaintop panorama from inside. Lower ceiling heights in the bar and *bierstube* on the first floor, and in the atticlike night

club on the mezzanine level, create interesting contrasts as well as a more intimate atmosphere for evening gatherings.

#### FACTS AND FIGURES

Aspen Highlands Ski Lodge, Aspen, Colo.

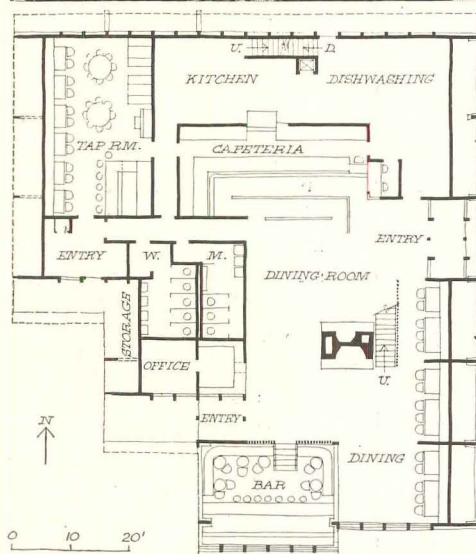
Owner: W. V. N. Jones.

Architect: Fredric Benedict. Structural engineers: Ketcham & Konkel. General contractor: Allied Builders.

Building area: 10,470 square feet. Construction cost: \$120,000; \$11.46 per square foot.



A black and white photograph of a large, modern interior space, likely a restaurant or lounge. The room features a high, vaulted ceiling with exposed wooden beams. A large, dark brick fireplace is the central focus, with a small, bright fire burning inside. To the left, a small model of a propeller airplane hangs from the ceiling. The foreground is filled with several round tables and wicker chairs, some of which are occupied by people. The lighting is dramatic, with strong shadows and highlights, emphasizing the architectural details and the social atmosphere of the space.







PHOTOS: GIL AMIAGA

## CLUB-IN-THE-ROUND FOR LONG ISLAND

Some unusual new shapes will join in the beach festivities on Long Island's Gold Coast next summer when the Harbour Beach Club, designed by Whittlesey & Conklin, opens at Westhampton Beach, N.Y. The shapes belong to the club's restaurant pavilion, which has a gay conoidal roof (called a hyperboloid of revolution), and two circular bath-houses (one complete, the other to be built this winter).

Located on a choice 3½-acre site on Westhampton's rapidly developing shore line, the club is bounded on one side by the Atlantic Ocean and a wide sandy beach. On the other side is Moriches Bay, where a circular dock for small boats is planned. The club will be built in three stages and eventually will offer its 250 members not only boating and ocean bathing but swimming and wading pools, a large open-air pavilion for dances and summer theater-in-the-round, a teen-age

snack bar, and a third dressing circle. Because of the gradual building program, the circular structures form an especially flexible scheme: with the irregular grouping, circles for new facilities can be added later without upsetting a preconceived balance.

All the buildings will be supported on exposed wooden foundations on a man-made dune about 18 feet high. The roofs and the curved exterior walls of the dressing pavilions are covered in weathered cedar shingles.

## FACTS AND FIGURES

Harbour Beach Club, Westhampton Beach, N.Y. Owner: Simon Enterprises, Inc.

Architects: Whittlesey & Conklin (partner - in - charge: William J. Conklin; associate-in-charge: Jonas Vizbaras). Engineers: Wiesenfeld & Leon (structural), Wald & Zigas (mechanical, electrical). General contractor: Harry J. Kangieser, Inc.

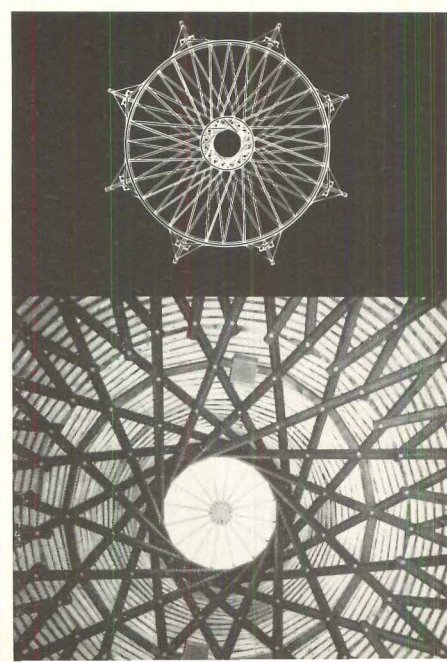
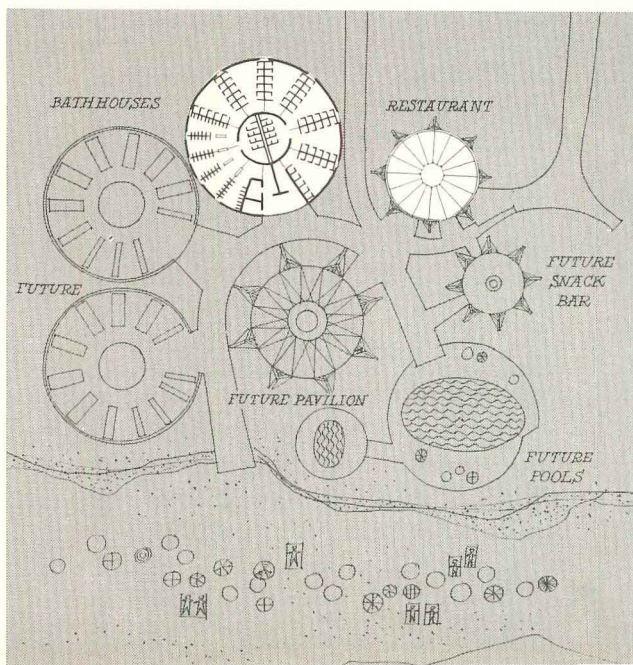
Costs: land and site development, \$40,000 (low price is prorated on the basis of a large purchase of real estate, including this parcel); construction, \$100,000.



*Squared wooden masts, purchased from a flagpole manufacturer, were woven and fitted together to form the structure for the conoidal roof. The poles are connected at top and bottom with two laminated rings, the bottom ring supported on V-shaped wooden columns braced by steel rods (right).*



*A swirl of boardwalks connects the present restaurant and bathhouses (top three structures in site plan, right) with the beach and road. A projected swimming pool, wading pool, open-air pavilion, snack bar, and a third bathhouse will complete the scheme. At far right, plan of roof, photo looking up.*





***Under the cold, hostile icescape of the Arctic, the U.S. has built a pilot "city" to study construction***





## 'MOON COLONY' ON EARTH

Beneath the vast, sub-zero plains of Greenland's ice cap, man is making his first major step toward developing the immense wastelands of the polar regions—and, through this experience, perhaps the uncharted lands of outer space. Here, 800 miles from the North Pole, the U.S. Army Corps of Engineers has established a village under ice, Camp Century, which contains: the first prefabricated, portable nuclear power plant designed to meet the needs of an autonomous community; a water and sewage operation considered unique in the world; and buildings made of paper and resin, and of frozen snow and ice.

The Earth's greatest untapped territory, its polar regions, comprise more than 7 million square miles, or one-eighth of its land surface. Aside from strategic military implications, and the exploration of unmapped mineral resources, Camp Century may even suggest answers for an overflow of world population, increasing at a rate of nearly 100 million persons a year. And since so many of its problems are similar to those expected in future moon colonies, some U.S. space scientists have suggested our astronauts live at Century and learn.

### Laboratory under ice

The camp, 152 miles east of Thule Air Force Base, is operated by the Army's Polar Research and Development Center under agreement with Denmark. In addition to the atomic power plant, its caverns house a complex of barracks and laboratory buildings that wind through four different levels of ice tunnels, accommodating up to 250 persons; during its planned ten-year lifetime, Century may house as many as 800 people.

As a multipurpose laboratory, the camp has supported nearly 100 research projects during the past two years, ranging from up-

per-atmosphere physics to improved weather forecasting techniques and glacial geology (including one program to drill two miles down to the very bottom of the ice cap). Experiments are carried out in radio communications, food preservation, special medical and healing problems, fuel and chemical storage in ice, over-ice and under-ice transportation methods, the development of better fabrics for cold climates. Planned are other projects such as the growing of fruits and vegetables with the aid of ultraviolet lights and hydroponic farming. Obviously many of these programs have significant value beyond the Arctic Circle.

The unprecedented task of maintaining a city under ice seemed jinxed from the beginning by the temperamental nuclear power system, a pressurized water reactor. Excessive radiation had to be overcome, as well as a multitude of problems in the steam generator and feed-water equipment (and a tendency in the extreme cold for the lube oil to pick up damaging steel particles from the drums in which it was stored). But the power plant is now operating as intended by its designers. It is a 1,500 kilowatt unit named PM (for Portable Medium Power) 2A, prefabricated on sleds in 27 giant packages that could be flown in by plane. PM-2A weighs 472 tons and cost \$6 million. It has already proved the

PHOTOS: LEE HAMILTON



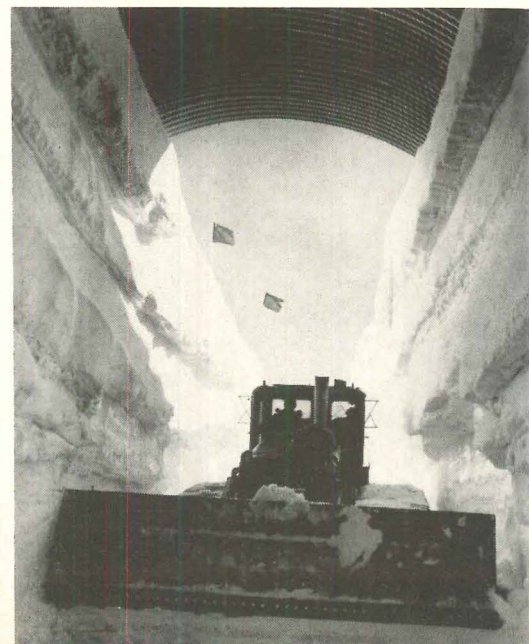
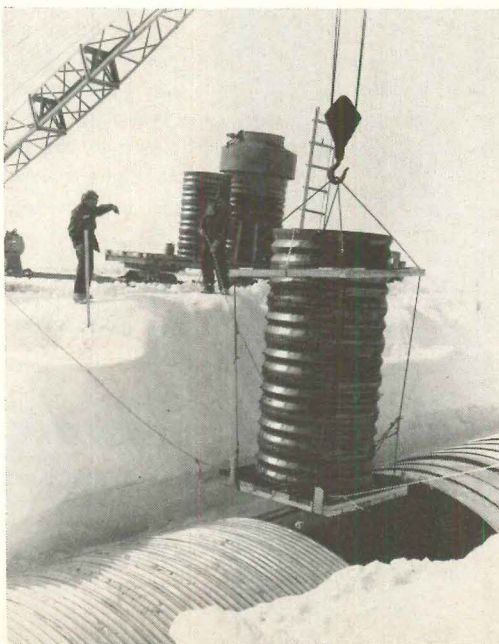
Lee Hamilton, science editor of *Junior Scholastic* magazine and a member of the American Polar Society, spent 15 days living with the Army Engineers at Camp Century. His book, *Century: Secret City of the Snows*, will be published by G. P. Putnam's Sons.





*A big Peter plow cuts a trench at Camp Century. The snow is blown into a long dune, later remilled and sprayed back to form a "snowcrete" arch.*

*Arched sheets of corrugated steel are erected as forms for snowcrete, and vent-stack section set in place. Right, tunnel is bulldozed clean.*





value of nuclear power for remote and fuelless regions: ordinary generators to power Century would have required 555,000 gallons of diesel fuel a year, costing more than \$28 million (\$11 per barrel for fuel, plus \$42 transportation costs). In contrast, only 100 pounds of atomic fuel are needed to meet round-the-clock requirements for an entire year.

### Pre-Columbian water

Citizens of Camp Century have the unique distinction of drinking water that predates the discovery of America. The water is "flash thawed" snow and ice, believed to be the purest natural water supply in the world, taken from a well whose current glacial depth represents more than 400 years of history. A steam drill inches its way through the ice cap, creating bell-shaped pools of melt water, which is pumped to the surface at a peak rate of some 10,000 gallons per day.

All buildings that require water and sewage facilities are built in six adjacent tunnels on one side of the camp (see plan). These plywood structures include Century's hospital, laundry, mess halls, washrooms and showers, nuclear power plant, and research laboratories. Water lines, including those for fire fighting, are heated by electric cables, insulated, and built with flexible joints—in the 17-degree ambient temperatures of the tunnels, freezing is a constant threat.

Sewage passes into a 4,000-gallon collection tank, whence it is pumped beyond the city's perimeter to a 350-foot hole in the ice cap. This polar septic tank does not require servicing, as the warm sewage slowly melts its way into the ice, automatically creating a basin that would take scores of years to fill. The extreme cold kills harmful bacteria.

### Walls that creep

The biggest housekeeping problem under the ice cap, however, is the fact that the ice walls are forever closing in. Scientists know little of what precisely causes the flow, and they know less about how to control it.

Most of the tunnel walls at Century creep inward at about an inch per month; a given tunnel shrinks two feet a year. The greatest mess in the camp takes place in the "warm" tunnels housing the kitchen and dining halls, the stand-by diesel generators, and the nuclear power plant, where closure sometimes reaches two inches a week on each wall.

Heat loss from the buildings is the major cause of this rapid flow, and no matter how much warm air is sucked out of the buildings and pumped to the surface, and no matter how much cold air is forced into the tunnels where closure is greatest, the problem continues. Some 40 tons of ice must be removed from the tunnels every six days—with picks, shovels, power saws, and unlimited verbal attacks. Needless to say, considerable research is underway to learn how closure can be impeded, if not stopped.

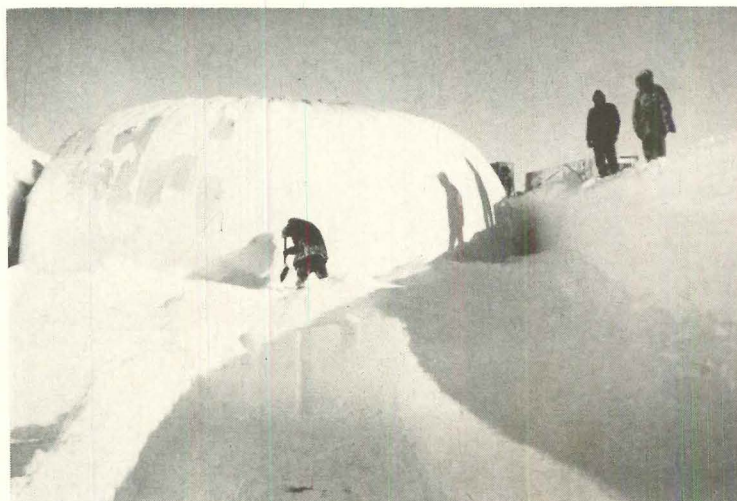
### Building with "snowcrete"

Scientists are also investigating the relationship of creeping ice and milled snow, the material used to build the arches over Century's tunnels. This "snowcrete" actually was discovered by accident.

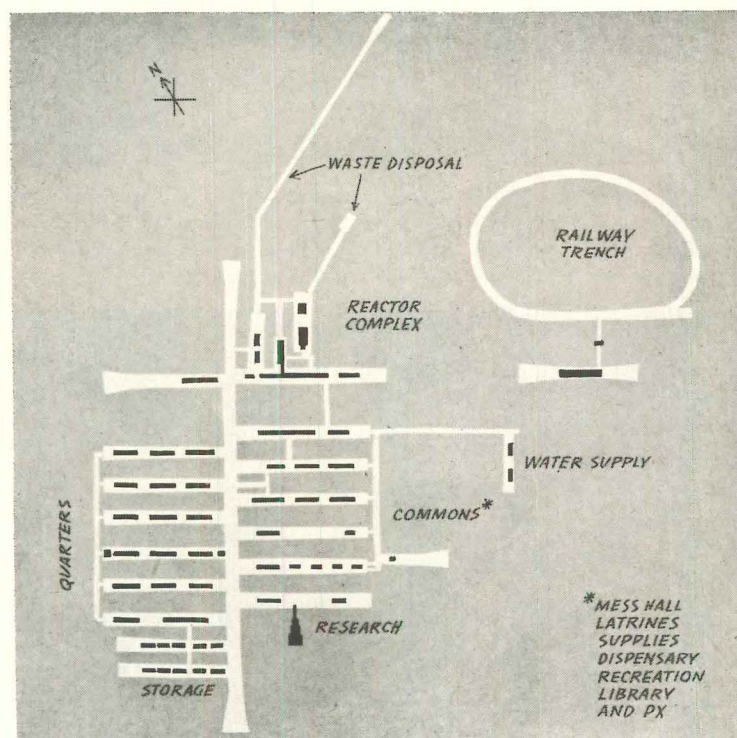
The engineering teams had brought with them a diesel-powered Swiss snow machine called a Peter Plow, designed for clearing Alpine roads of avalanches. The plow's powerful rotary blades chew up tons of snow which is fed to blowers at the rear.

When the plow first went to work, a startling discovery was made. The wind had carried the fine, sandlike granules and deposited them in a neat ridge of snow along the edge of the trench. Within two hours the subfreezing temperatures had transformed the milled snow into a dune as hard as concrete.

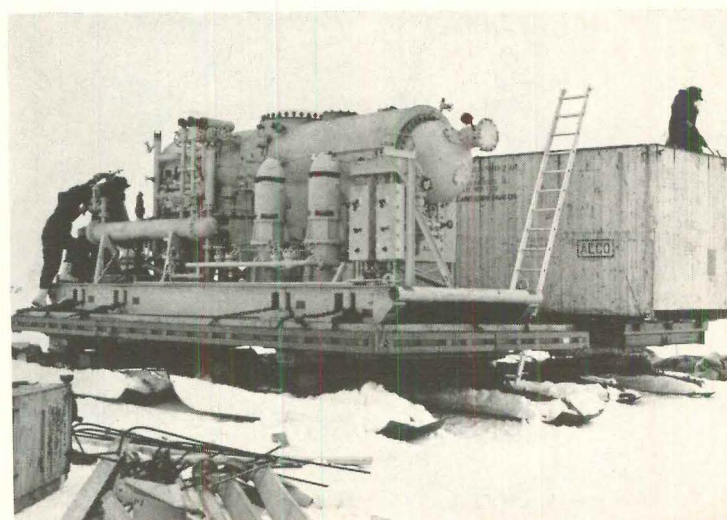
It was suggested that an arch of corrugated sheet metal be placed over the trench and the plow driven along the frozen dune, devouring it and spraying the twice-milled snow back over the arch. Within a few hours, the arch was strong enough to walk



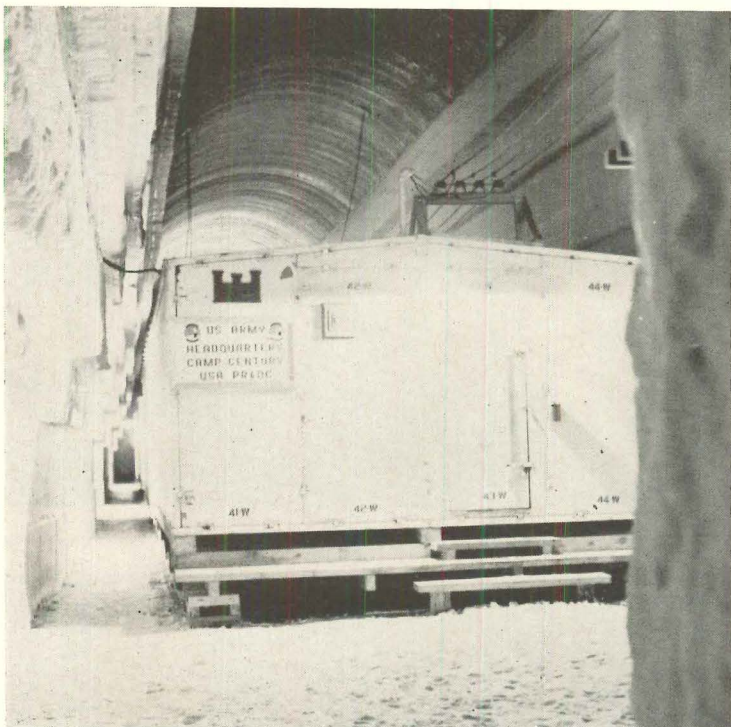
Experiments continue on inflated fabric structures covered with snow



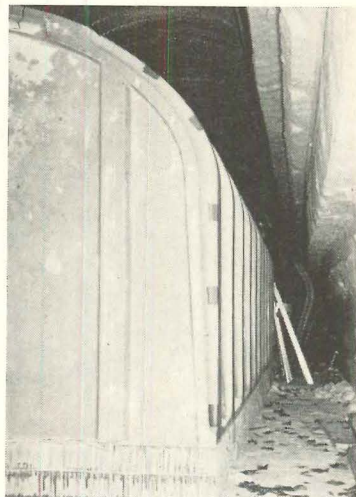
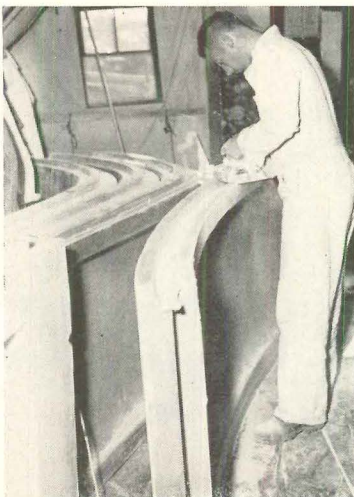
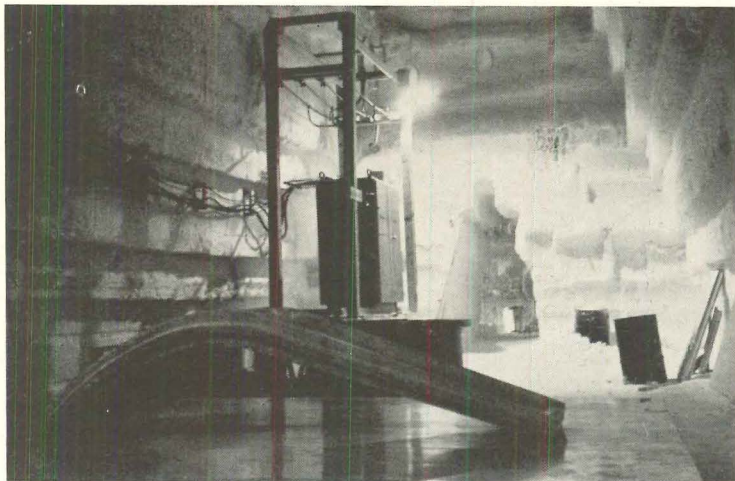
Below: major component of the reactor on its sled, before installation







*Building under ice: standard unit is an Army T-5 plywood prefab, raised for air circulation. Below, a research tunnel shows undercut ice-arch cavern, "Siamese" ice door, transformer lines. In foreground: a section of the new paper-and-plastic hut (bottom).*



LEE HAMILTON

over and "snowcrete" was born. Century's city of 36 tunnels has been built by this cut-and-cover technique. Research continues on different kinds of arched trenches and snow-covered inflated domes. The next step will be adding alloy materials such as sawdust and glass fibers. Space scientists are especially interested in these applications: some think that lunar dust can be utilized in a manner similar to snowcrete.

Last summer work began on an extraordinary Arctic subway. In an oval trench adjacent to Century, research is proceeding with flatbed railway cars and trucks to determine whether an undersnow railway system might be built to Century's base supply camp 138 miles away. Eventually, a railway snaking hundreds of miles under the ice cap is thought practical as an ideal way to supply polar communities built either above or below ground.

#### **Paper buildings**

Century's major living units underground are prefabricated plywood buildings, standard Army T-5 structures 16 feet wide, 76 feet long, and 12 feet high (photo above). Each unit is raised two feet to provide circulation of cold air around it; radiant heating pipes are installed between floor ribs, with heat blowers in the walls.

The T-5s, however, were never intended for such use; their substantial heat loss helps melt the snow walls, and they are stuffy and hard to ventilate under the ice. Dry and parched throats are an occupational hazard, and there is a constant danger the buildings will go up in a gulp of flame.

To overcome these problems, a new concept has been evolved: a unique hut-building of paper, glass fiber, and polyurethane foam (photos left). This "building in a barrel," as it is called, can be air-dropped and erected by unskilled labor on the spot. When completed it is self insulated, fire retardant, and virtually maintenance free.

Basic core of the building is a collapsible paper honeycomb which can be extended to a length

of 16 feet, with a 3-foot width and a maximum thickness of 6 inches. A 1/16-inch layer of epoxy resin is poured into an aluminum panel mold and topped with a cloth of loose glass fibers and the extended honeycomb. The reverse procedure is followed on top. Before the epoxy is poured, a large sheet of vinyl is placed under the aluminum mold. When all the ingredients for the panel have been sandwiched together, the vinyl is sealed over the mold and a vacuum-bag curing process employed.

Enough air is drawn out of the bag by a vacuum pump so that only 2 psi pressure remains, causing the atmospheric pressure on the outside of the bag to act as the press. The mold remains under 2 psi pressure at 180 degrees for four hours.

The result is an unusually strong panel. When suspended between two points, one 50-pound, 16-foot section will support 5,000 pounds.

All panels—floors, walls, and ceiling—are made in 3-foot widths, and from 4 to 8 inches thick. Four-inch-wide fabric adhesive tape is heated and applied to seal the joints. Doors, windows, and vents can be installed at will by sawing out a hole.

#### **Last test: people**

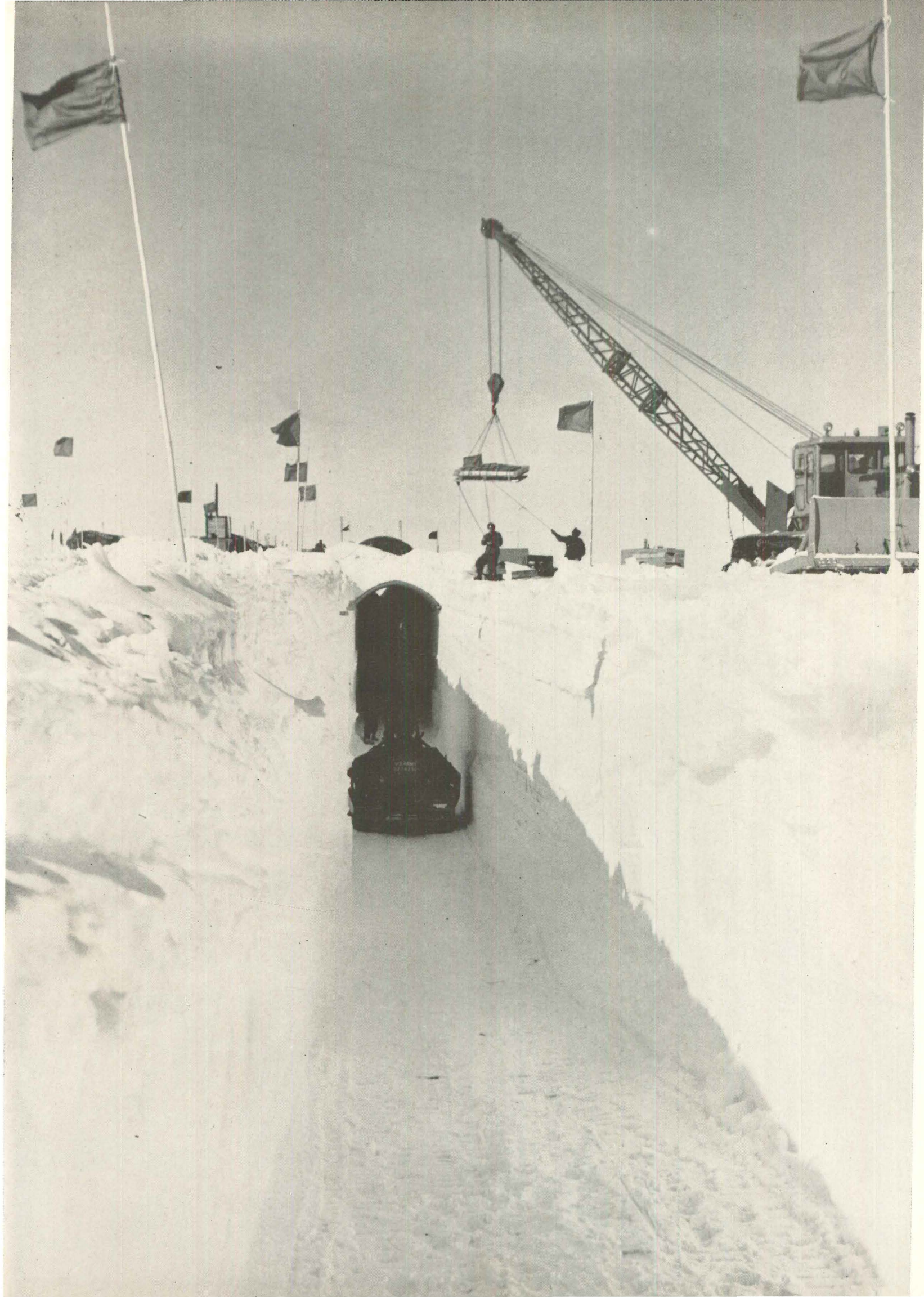
Future moon colonists will almost certainly face many of the same psychological hazards and much of the loneliness of Century's pioneers. The mental and physical stress of living there constantly reminds the men they are without the sounds, smells, and colors of civilization—eating the same food, seeing the same people, following the same hard routines.

No scientific or military personnel are asked to live and work in this under-ice world for more than six months at a time, and those who return do not come back unless they have been in the U.S. for at least four months.

"What we need," said a young civil-engineering student serving in Century's other-world, "is women, a few trees, and perhaps a bluebird or two." And, he might have added, a few familiar billboards and traffic jams.

END











## THE NEW YALE COLLEGES

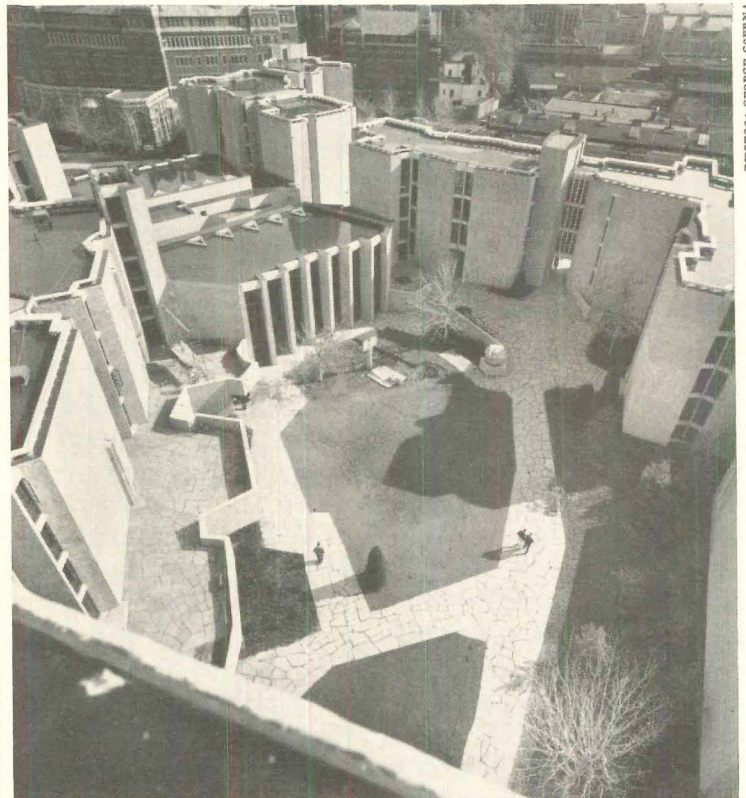
Inserting two brand-new building groups into the determinedly ancient environs of Yale University was potentially as dangerous as introducing a pair of young "method" actors into a group of retired Shakespeareans. A chilly impasse could have been created between the fraudulent (but long-ago forgiven) existing architecture and any moralistic modern. Yet anyone familiar with the architect, the late Eero Saarinen, would know he would design assertively. Judging from the exuberant hockey rink he had already built for Yale (FORUM, Dec. '58), some expected that Saarinen might drop an architectural blockbuster between the neo-Gothic gymnasium by Architect John Russell Pope and the neo-Georgian graduate school by James Gamble Rogers, upstaging them both. It must have been a temptation.

If it was, Saarinen withstood it. What he and his design colleagues did instead was to try to extend the basic shapes of Yale: horizontal buildings around close courtyards defined by occasional spiked or paneled towers, pieced together by plots of grass like a patchwork quilt. Within this transplanted tradition (from Oxford) he set himself to create a firm piece of comfortable, even interesting, design that could differ with the old without breaking off the conversation.

The result is very episodic architecture, seldom seen whole (except from nearby towers, as in the photograph, right). A walk through the intricate ways of Morse and Ezra Stiles Colleges on days of differing weather is probably the only way to appraise it. One visit won't do it, for this is architecture which is either developed or damned by the kind of sky above. This, essentially, is a report of several such walks.

But first, some facts. Samuel F. B. Morse College and Ezra Stiles College—which each house 250 undergraduates—are the newest of Yale's 12 separate living groups. The colleges are themselves considered very special ingredients in the Yale education. They are much more than dormitories. Each college, for instance, has its own spacious dining hall, although Morse and Stiles, for economy, deftly share a kitchen, which is under the elevated walk between the two colleges (photo on facing page; in the background, Yale's Payne Whitney gymnasium). Each college has a comfortable gentlemen's library of its own—and these are not merely bookish gestures; they have shelf space for 13,000 volumes and enough chairs scattered around to seat 60 (see photo, page 109).

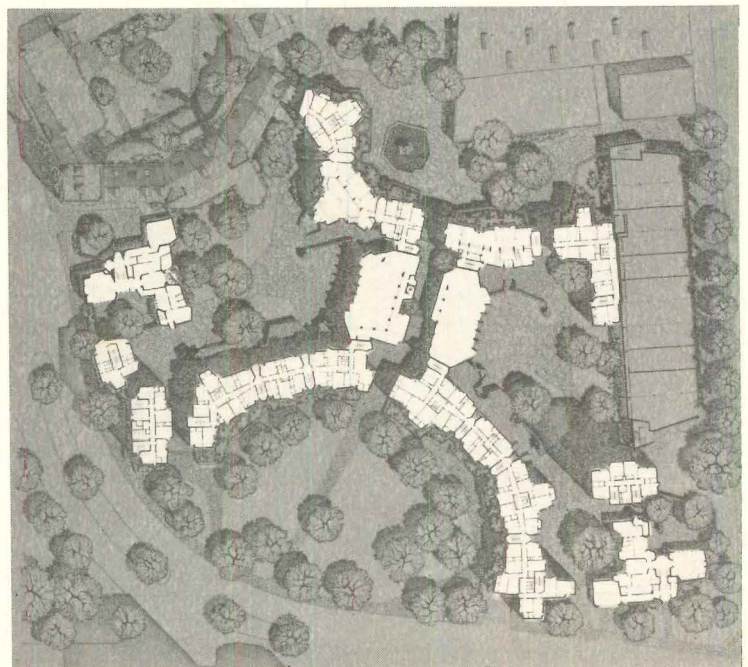
To replace the commons rooms customary in older Yale colleges, Morse and Stiles have "butteries," which amount to very big, rathskeller-like snack bars. Attached to all Yale residential colleges are masters' houses, in each of which live



PHOTOS: GEORGE CSERNA

*Tall windows of dining halls dominate the vigorously designed courts*

*Few students' rooms are near the busy street which borders the site*





an eminent faculty member and his family to function as general intellectual guardians and hosts for students and official visitors. In addition there are apartments in each college for four resident fellows, younger instructors who participate in the social life of the colleges, plus such spaces as lounges where nonresident fellows gather before dinner for a drink together. The two new colleges include seminar rooms as well, for incollege instruction, and there are rooms for billiards, Ping-Pong, and so on. Morse and Stiles do not have squash courts, unlike some older colleges, but there are plenty of these across the street in the gigantic gym.

It is, as college living goes, a luxurious life, and this extends to the undergraduates' rooms. In Morse and Stiles, the rooms are mostly singles, and the floor plans are deliberately varied. By piecing together a variety of polygonals to make the rooms, the Saarinen office implemented the determination of Yale's President, A. Whitney Griswold, to emphasize and encourage diversity among students—and also broke the building's exterior walls into highly expressive planes. These rooms are described more fully on pages 108 and 109.

The financial facts behind the new colleges are also significant. The Yale college built most recently before these two was Silliman, in 1940, which cost just under \$2 million then, but might cost \$5 million to duplicate today. Morse and Stiles were each budgeted at \$3.75 million. Expectations and requirements were high; there was no money to waste.

#### **The siting, shapes, wall, and—most of all—the shadows**

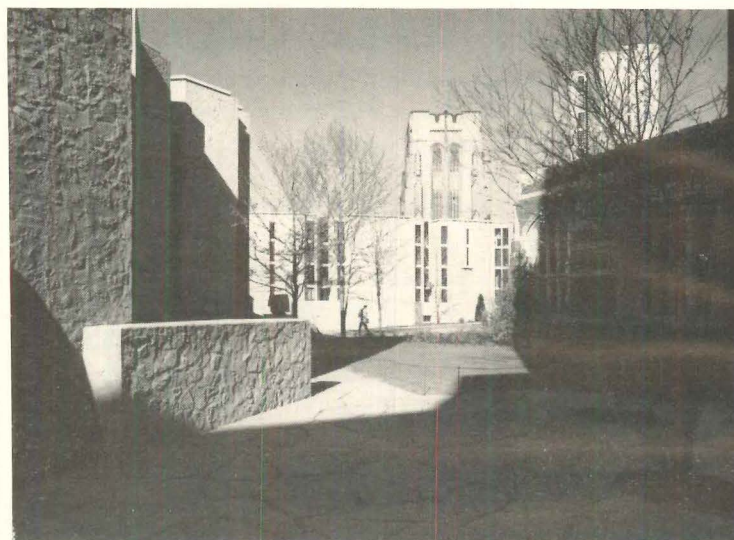
Even before construction began, Saarinen's design had become famous in the architectural world in model form. Finished, full size, there are two surprises. First, the buildings are not so cramped nor complicated on their site as expected; second, the masonry wall developed by the Saarinen office has less "tooth" to it than predicted in model or in mock-up.

The site for the colleges is scoop shaped, rounded by a heavily traveled street, but the principal approach is across a broad lawn which sets the buildings back from the road. (On the other border the shield from the street is a row of shops leased to the Yale co-op.)

Across this grass, the towers and lower wings await the visitor

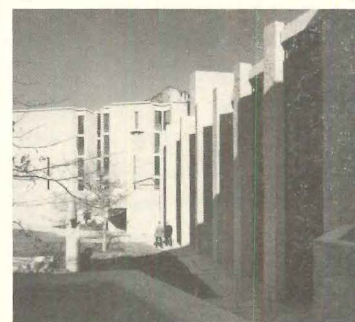
with deceptive tranquility, seeming no more intense in effect than the older, fussier architectural images around them. They are strong without being competitive: their character is somewhat pre-Gothic, with a hint of the resolute early Romanesque in their massing and shaping.

But then, the visitor walks up several steps and enters an interior court which is anything but tranquil, a close architectural embrace, which, in sunlight, is very strong. The Gothic and Georgian towers continue to peep over the walls, but they are remote. A Georgian wall borders one of the new courts (photo, top right), but it succumbs gracefully to the new architecture. Unlike the graceful courts of most of the



older colleges, the new ones have no symmetry, but great vigor.

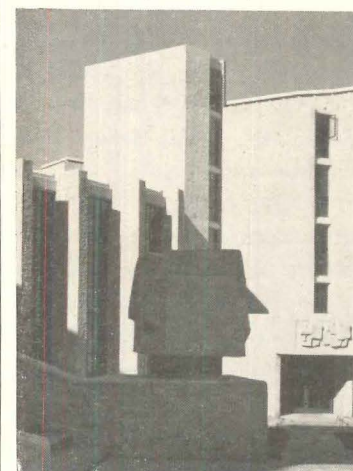
What produces it? The changes in level in the courts count heavily, but probably more emphatic than anything else are the jagged, dynamic shadows thrown slanting



down the walls by the angular buildings, continuing down across the grass plots, across the paving, down the retaining walls. As the shadows readjust with the sun, it seems they are almost visibly in motion. Lacking the texture of an expensive masonry wall, Saarinen depended upon these shadows for his detail, and it works. The effect is powerful without becoming chaotic, perhaps because there is a single strong building shape dominating each of the new college courts—a dining hall with tall windows whose importance

is emphasized by the grass which slopes down toward it.

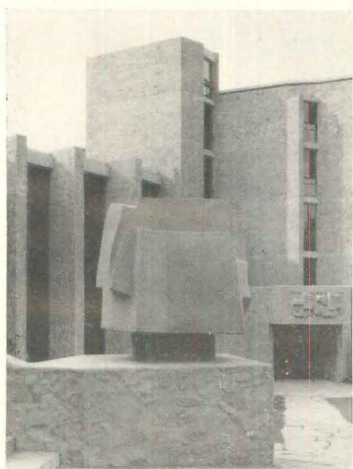
True, when the sun is not shining, everything dies a little. There is simply not enough texture to the walls to support the shapes and the idea. These walls were built by dropping rocks into the formwork, then injecting mortar containing a retardant, then stripping the forms, then scrubbing the exterior surface down with a brush. What Saarinen said he was after was the look of old Pennsylvania Dutch stone walls, fat with mortar, and in sunshine the effect occurs (photo below). Without sun, however, the wall, in its vul-



PHOTOS: GEORGE CSERNA



nerable newness, looks unfortunately like icebox cake sliced with a sharp knife (photo below). It is a pleasant, warm color, but its shaping, particularly its angular protrusions, is unconvincing, staged, too deliberately plastic. To a degree the same thing is true of Costantino Nivola's sculpture, placed everywhere (on walls, over doorways, standing free on pedestals): it is lost in



that sculptural limbo between decoration and declaration.

These are the exterior defects in the design, and they are serious. In economizing on the masonry wall (which cost even less than a good brick wall), the design suffers. But it is strong enough to survive. Moreover, the passage of a little time will probably cure it; the bland masonry will soil, adding seriousness.

Meanwhile, Morse and Stiles are robust method actors who neither mumble their lines nor sneer at their elders, but exist with a huge pleasantness which is perhaps best suggested by the photograph of one of the dining halls, right. It is the individual rooms, however, that finally establish the success or failure of a residence. For more on this aspect of Morse and Stiles, turn the page.







*Dining hall finishes are concrete, stone, oak, and glass. Saarinen's aim was to design the new colleges "as citadels of earthy monolithic masonry."*

*Typical students' rooms, which are scorned by a British critic (page 110) as being "below even the medieval standards of student accommodation."*





Before starting to design the Yale colleges the Saarinen office painstakingly attempted to determine which of two existing Yale room patterns undergraduates preferred: the Georgian or the Gothic. (The Georgian rooms are fairly "modern" with regular, large windows in the middle of exterior walls, straight corridors, and a generally simple, serene disposition of space. The Gothic rooms are more irregular, with small windows, crooked halls, and unexpected, sometimes peculiar, spaces.) Surprisingly, the students overwhelmingly preferred the Gothic. It was less dull, more personal than the Georgian.

This study fathered the designers' notion to try to achieve the kind of space which has enraged Critic Reyner Banham (see next page). But, the architects, before they had convinced themselves that it was feasible to build other than the usual rows of identical, rectangular rooms, off a plainly efficient hall, had mocked up 30 full-sized polygonal rooms and furnished them. In the doing they worked most of the peculiarities out of the space, but preserved most of the individual flavor.

The new colleges are popular;

many more than a full roster of students applied to transfer from older (and more spacious) quarters when Morse and Stiles were opened. This is probably true partly because more than 70 per cent of the new college bedrooms are singles, but the students also claim they enjoy the impregnable atmosphere. The bulkiness, incidentally, is not false; acoustically the rooms are well sequestered. Record players are rife but complaints are not.

Space per student averages about 172 square feet, well above the usual U.S. government-loan college-student room. Included is a large walk-in closet, in itself a small room, big enough to contain a bureau as well as racks and shelves. This was intended to compartment off some of the usual undergraduate clutter. (Some Yale men make their beds; some do not.) Windows reach floor to ceiling, with adjustable interior shutters. Students furnish their own chairs, and tables, but desks are built in, with electric lighting incorporated above them. Heating is radiant, from the floors.

The principal planning problem in these dorms was the continuation of the "entry" pattern of



older Yale dorms, which the client made part of the program. The traditional circulation is primarily vertical, with frequent stairways and groups of rooms clustered around them, and no long hallways. But since the time when the older colleges had been built, codes in New Haven had been altered to demand a second means of egress on all floors. The designers solved that complication without adding expensive stairways simply by enlarging lavatories and putting doors at both sides (see plans), thus leaving groups of rooms isolated, but still accessible from any stairway.

Also typical of the rational approach which led to complicated but satisfying solutions are the libraries in Morse and Stiles. Saarinen's office studied the libraries in the other ten Yale colleges and found that it was not the most imposing architectural spaces which were most used by

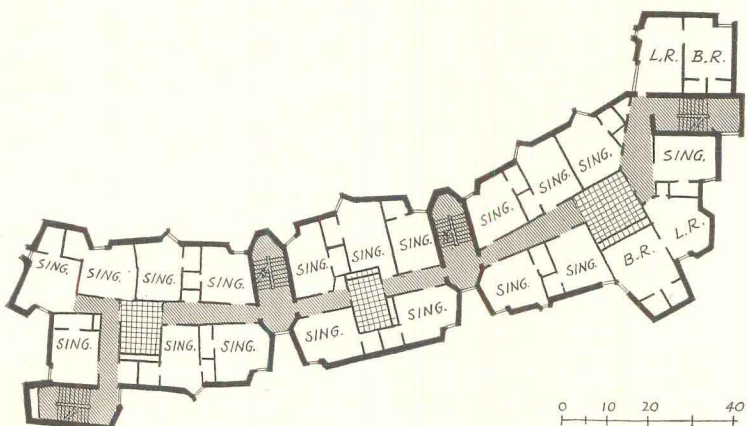
these inexplicable Yale undergraduates, but the most partitioned one. Saybrook College's library had been fitted into a former hallway of rooms with wall-bearing partitions, and was the most popular. So Morse and Stiles libraries (photo, above) are also well compartmented—and they are also very well used.

#### FACTS AND FIGURES

Samuel F.B. Morse and Ezra Stiles Colleges, Yale University, New Haven, Conn.

Architect: Eero Saarinen & Associates. Engineers: Henry A. Pfisterer (structural), Van Zelm, Heywood & Shadford (mechanical). Landscape architect: Dan Kiley. General contractor: E & F Construction Co.

Cost: \$7.5 million, for approximately 237,600 square feet. Structure: reinforced concrete bearing walls and concrete roof and floor slabs. Interior partitions and bearing walls of concrete and concrete block. Plaster on metal studs for nonbearing partitions.





*The British architectural critic, Reyner Banham, visited Yale late last spring and gave his countrymen a negative report on the design of Morse and Stiles in the July 13 New Statesman.*

It is accounted one of my faults as a critic that I don't disgust easily: too prone to see the extenuating circumstance, to withhold judgment until reflection has mastered rage. But I have seen one building in the last month that disgusted me at sight, and it still disgusts me after four weeks because there are no extenuating circumstances—the client gave the architect plenty of rope.

The Morse and Stiles dormitories for Yale University are among the last works of the late Eero Saarinen, architect of the U.S. Embassy in London. The dormitories, organized as two separate "colleges," exhibit the symptoms

of a fairly advanced case of that mania for the picturesque (in the corny sense of the word) that has affected recent academic architecture on both sides of the Atlantic. Compositionally, the scheme consists of towers connected by jaggedly faceted linking blocks of more domestic scale, coming down to a single story in places. The whole seems to aim at monumentality of silhouette, but fails in the attempt because of the unbelievable tawdriness of the constructional method, which consists of random lumps of stone embedded in structural mass concrete. It is difficult to imagine a more obviously cheap and nasty way of trying to style up concrete to look like something more romantic, but another cause of disaster is poor site supervision of the concreters, who have let the distribution of the stone become excessively random in places, and other crudities.

However, it was not this that disgusted me—some of my favorite

hamburger bars are built like this. Far worse, to me, is the way in which the Gordon Craig-type scenic effects (equally suitable for *Macbeth* or *The Desert Song*) have been bought by providing interior spaces that fall below even the medieval standards of student accommodation that the picturesque elevations are all too obviously intended to recall. The staff flats are bad enough with their cramped, awkward room shapes, espresso-bar crazy paving, and windows placed to give the architectural photographers Caligari lighting effects, not to provide the inhabitants with illumination or a view. The students are spared only the crazy paving, but their rooms are smaller and, in some cases, more awkward. . . .

It was horribly fascinating to sit afterwards in Philip Johnson's glass house in New Canaan—one of the most pellucidly habitable structures in the world—and hear U.S. architectural pundits of Museum of Modern Art calibre admitting that these rooms are uninhabitable, yet praising Yale for being "responsible" enough to let Saarinen do it. Semantic chaos descended to give an accolade to gross dereliction of professional duty—to encourage an architect thus to play at being a "pure" artist is to amputate the factor of use that gives architecture the moral and human authority that painting and sculpture lost long ago.

It might appear better in some ways to pass over Morse and Stiles as a late aberration of a good architect—most U.S. critics will probably do this anyhow, partly because no one is anxious to cross the formidable Saarinen widow. But they mustn't be allowed to get away with it. Not only do the dormitories exemplify that creeping malady that causes an increasing number of returning Europeans to say "Yale is a very sick place," the malady of gratuitous affluence irresponsibly exploited, but they

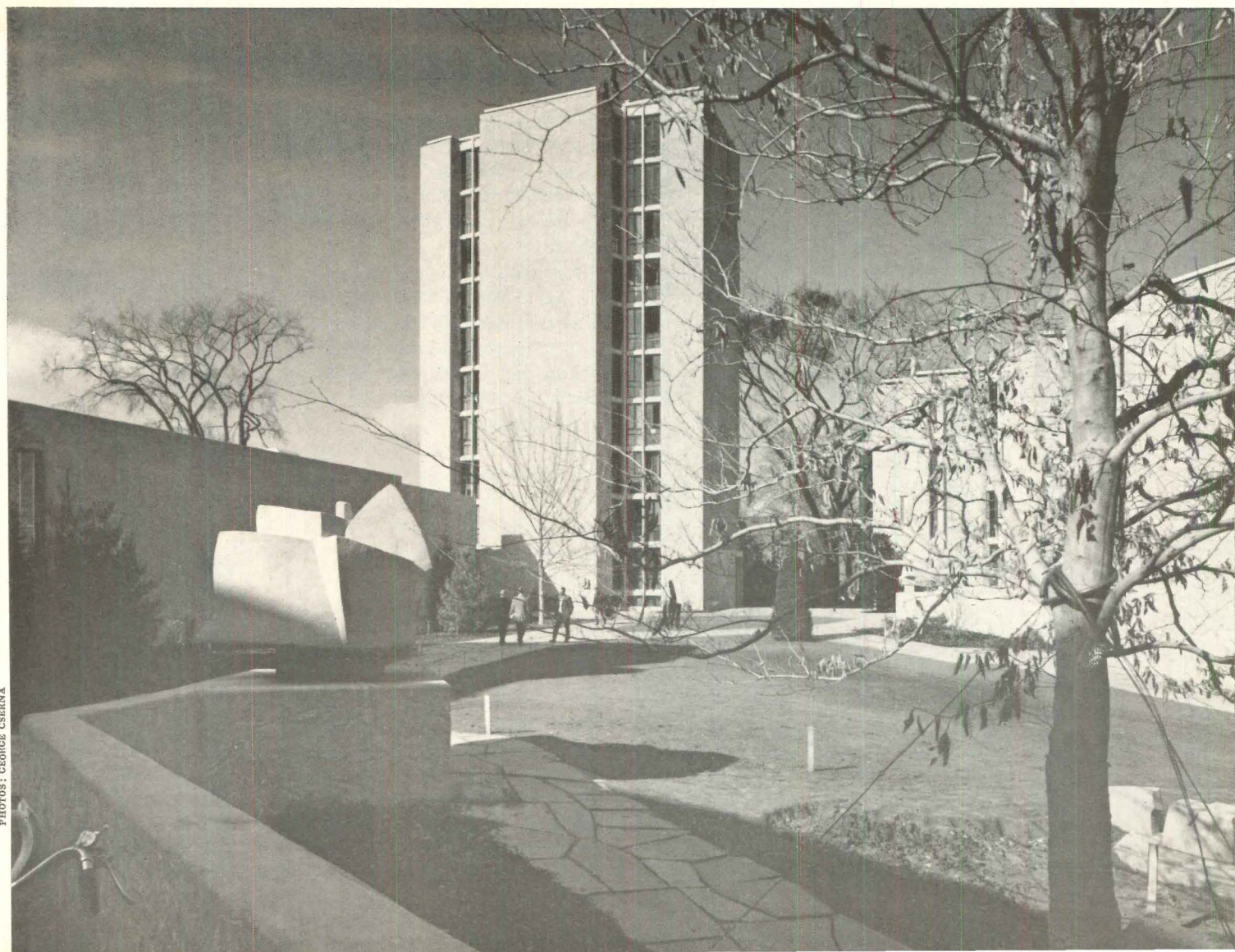
also exemplify something that could happen here.

From Alan Bullock's briefing to Arne Jacobsen—"make me an American-type college"—onwards, it has been clear that there would be a market for U.S.-type academic architecture over here, and the response in gaga junior-don circles to projects like Stirling and Gowan's Selwyn scheme or Howell-Killick-Partridge's "second prize" scheme for Churchill College shows only too clearly that Morse and Stiles-type aberrations would be the preferred style. Not because of the actual architectural merits of Selwyn or Churchill, but on the purely superficial grounds that they "get away from the glass box" or some such. As in Yale, so in Oxbridge, a complete lack of any sense of the real priorities in student accommodation, a complete lack of fundamental research into student requirements. The best recent collegiate work in Cambridge (Oxford has yet to begin) is still medieval with electric light; emulation of the Yale bent could merely confirm them in this, and encourage the new baby universities to do the same. But here at least there is some hope: the newly published master plan for York University, the work of Andrew Derbyshire (of Matthew and Johnson-Marshall) belongs to exactly the opposite world to Morse and Stiles. If the buildings match the plan, there will be one university we don't have to worry about.

*Note: as most readers know, it is difficult to argue sensibly about architecture. However, it would be cynical not to register an opinion about the piece of prose reprinted above. Banham is an always readable, usually reliable critic. But "below even medieval standards," "gross dereliction of professional duty"? Really, Mr. Banham! Really, Mr. Banham?*  
—W. MCQ.











## ALCOA'S BIG EXPERIMENT —TEN YEARS LATER

The building industry's biggest full-scale laboratory is celebrating its tenth birthday. It was just a decade ago that the Aluminum Company of America moved into the 30-story Pittsburgh headquarters that it had daringly decided to build as a field demonstration of its product innovations. Alcoa had two aims: to prove aluminum's effectiveness and durability in a variety of new building uses—and, hopefully, to give these uses a spectacular push forward into the market place.

Today, even a casual look at the diamond-stamped building, the work of Architects Harrison & Abramovitz, clearly shows that the first goal was achieved. With minor exceptions, the tower stands in mint condition a quarter of the way through its theoretical useful life. Alcoa's showpiece (with a little help from the janitorial staff) has certainly paid off in proof of the products' durability.

The paradox of the Alcoa building is that its experiments have not fared quite so well in the market place, at least in their original form.

The prime example is the curtain wall. The building's skin is of 1/8-inch anodized sheet aluminum, stamped to increase rigidity, to help conceal wrinkles, and to impart what the designers felt to be a pleasing pattern.

The wall looks as good today as it did 10 years ago (see photo left). With the exception of one tiny area, in fact, it looks exactly the same, and therein lies a par-enthetical tale: The sheet aluminum was given an extremely thin coating of lacquer to protect it from damage during construction. The lacquer was expected to wear off in a few years, but it is still there, except at a corner near the roof-top cooling towers (see close-up photo, right). The spotting here may have been caused by the rubbing of a maintenance scaffold, but Alcoa predicts that the rest of this unexpectedly tough coating

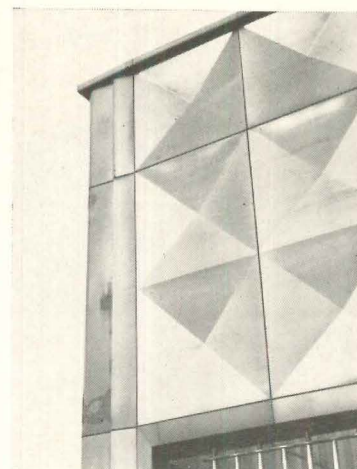
will fade away more gracefully.

In the past decade, of course, the use of aluminum curtain walls has increased steadily. Their phenomenal acceptance is shown in the chart at right. (The slackening growth in the past two years is attributed by Alcoa to the heavy criticism of the sameness of many curtain walls, and to the architectural profession's renewed search for depth and texture in the surfaces of tall buildings.)

Does this decade of growth mean that the Alcoa wall succeeded in giving exterior use of aluminum a major push? It did so, it was an indirect one. The upward thrust of the graph represents grid-pattern curtain walls almost exclusively. The number of designers who picked up the Alcoa building's stamped-surface concept can almost be counted on the fingers of one hand.

Alcoa, however, has far from given up on the idea of the textured wall—the company feels it is ready for this era of reaction against the blandness of the glass-smooth grid. It has three cards up its sleeve:

1. The technique of making dies for big stamped panels has reached the point where they can be as little as one-sixtieth as costly as they were ten years ago. Today, stamping dies similar to Alcoa's can be made for about \$1,000 each with the improved methods.



WILLIAM E. CORNELIA



## TOTAL ALUMINUM USAGE FOR CURTAIN WALLS

MILLION LBS.

80

60

40

20

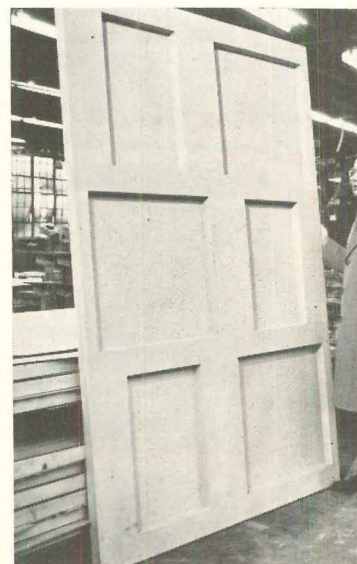
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1952 '54 '56 '58 '60 '62

2. Alcoa sees great potential in a brand-new casting process. The use of aluminum castings for spandrel panels over a masonry backup was popular as far back as 30 years ago: three million pounds of aluminum were used this way in New York's Rockefeller Center, but as a costly, heavy,  $\frac{1}{4}$ -inch veneer, slow to fabricate and available only in small sizes.

The new casting process is expected to produce panels up to 5 by 8 feet and as thin as  $\frac{1}{8}$  inch—with mass production efficiency (see photo, right). Eventually, Alcoa expects cast panels to be competitive in price with panels of sheet material, at the same time offering a much-wider range of shapes and textures.

3. Further in the future, Alcoa foresees the possibility of a fully load-bearing aluminum wall made of the giant extrusions which have become practical with new forming techniques. A step in this direction is the new Westinghouse Telecomputer Center by Architects Deeter & Ritchey, now under construction near Pittsburgh, which uses massive extruded aluminum mullions as a bearing framework (photo right).



### What happened inside the Alcoa Building

Inside its stamped sheath, the Alcoa building put aluminum to work in four new ways:

- ▶ In pivoting, pneumatically sealed window frames;
- ▶ In a radiant panel heating and cooling system combined with acoustical ceiling pans;
- ▶ In electric power distribution;
- ▶ In a network of plumbing pipes.

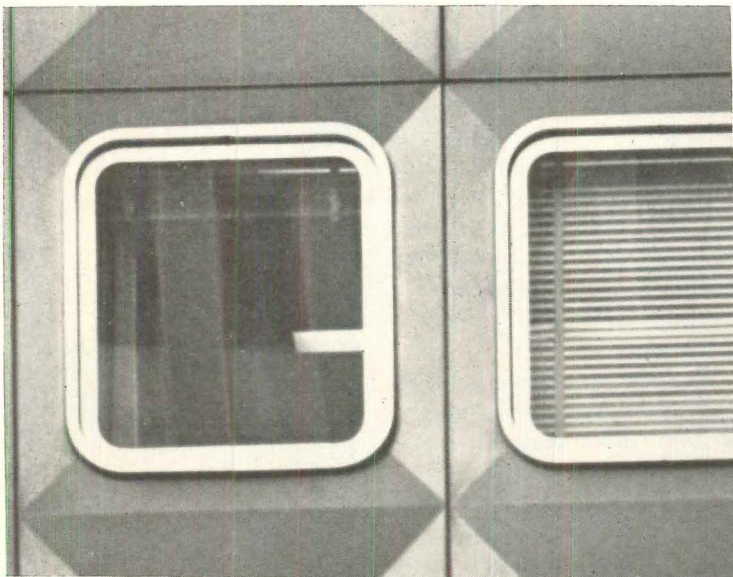
The windows, bucking the headlong trend toward glass walls already underway, opened up only 30 per cent of the façade. They were double glazed, with a heat-resistant outer layer, and their pneumatic gaskets allowed absolutely no infiltration of air. The specially fabricated, vertically pivoting frames cost close to \$300 each, an imposing figure Alcoa felt was offset largely by their research value, but also by savings in the cost of window washing (which

could be done from inside).

The window was carried in the manufacturer's catalog for a few years, but only one major sale was made. Like some of the building's other product ideas, however, it exerted a strong influence. Several manufacturers put pivoted windows on the market at less than half the cost, using a wiper-type gasket (see section overleaf) that admitted only 0.1 c.f.m. of air through each lineal foot of frame, and lighter frame sections which could be made strong with new welding techniques.

The Alcoa building's handsome windows are, incidentally, the source of perhaps the only comfort problem experienced by its remarkably contented inhabitants. There is no thermal break in the frame extrusion, so the inside surface temperature of this rim is

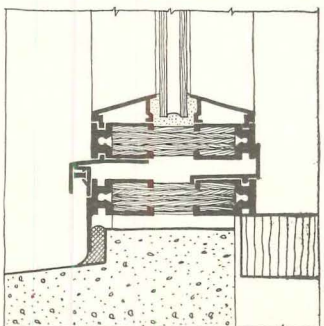
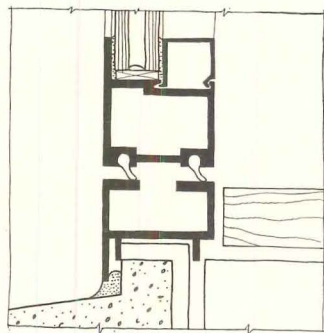
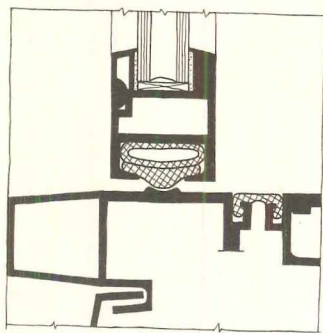




WILLIAM E. CORNELIA



LIONEL FREEDMAN



*Alcoa's sturdy, airtight windows (photos and section above) seem small in the stamped façade from outside, but are ample inside. Window sections show a less costly adaptation, now quite popular (upper right), and the latest refinement with a plywood thermal break in the frame (hatched, lower right).*

about the same as the temperature outside. On cold winter days, humidity must be lowered inside to prevent condensation on the frames. The resulting dry atmosphere permits static electricity to build up in carpeted areas, and sometimes annoying shocks result from touching metal.

The carpets are now sprayed with an antistatic solution, and this helps. A more permanent answer is in windows designed with thermal breaks, which are now beginning to appear as stock items.

The Alcoa building's inhabitants pay the highest possible compliment to the radiant acoustical ceiling made of aluminum: they consistently report they never notice that the building has a heating and cooling system at all. (The visitor can hear an occasional quiet crackling noise produced by expansion and contraction of the perforated aluminum tiles as the water temperature changes in the pipes from which they hang, but it does not trouble Alcoa's employees.) Engineer Alfred I. Jaros, Jr., of Jaros, Baum & Bolles, designers of the installation, still believes that the radiant acoustical system is remarkably economical.

Yet its impact on the market has been less than overwhelming. The manufacturer has sold some 10 million square feet of radiant acoustical ceiling tiles, mostly to schools, hospitals, and other public buildings of moderate size. But the system has been used in only one other major office building—the H. K. Porter headquarters a block away from Alcoa in Pittsburgh. The Porter firm was one of Alcoa's original tenants. When the company needed more space, it asked Harrison & Abramovitz to design a building as much like Alcoa's as possible.

#### **How piping, wiring fared**

The idea that met the least success in the building market, however, was the aluminum plumbing pipe. Not that it didn't work: the system has been trouble free, except that short sacrificial sections of pure aluminum pipe had to be put between the mains and the copper and brass fittings to prevent elec-

trollysis, and subsequently replaced in most of the smaller-diameter pipes. Alcoa was preparing to develop fixtures fitted out with aluminum as the next logical step, when along came plastic pipe. Alcoa strategists saw the handwriting and turned to other uses for aluminum pipe.

What has been the fate of the last major innovation, the aluminum power-distribution network? The conducting wires themselves were clearly less costly than copper, but they were also a good bit thicker. So far the higher cost of wrapping insulation around them has wiped out the savings in metal in the smaller sizes. But today, the trend is toward wider use of aluminum for larger wires, and Alcoa sees a competitive future for smaller sizes as well.

The heavy extrusions used for the main power feeders also proved highly efficient. But in the sector bus-duct configuration that was chosen, they required a good-sized service space on each of the building's 30 floors. The cost of this cubage ate up any economies that aluminum brought to the system. In more conventional shielded busway systems that can run through spaces shared by other services, however, aluminum has made heavy inroads on copper.

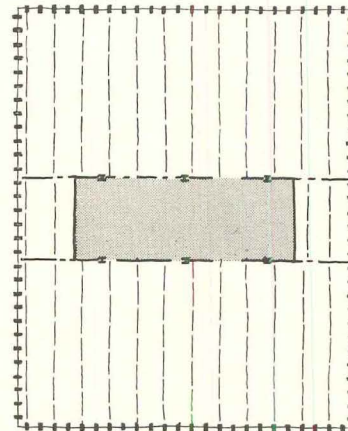
The ideas pioneered in the Alcoa building 10 years ago, now proven by time, have had far from an easy road to the market place. One reason for this, no doubt, is the fact that Alcoa has long followed a policy of not competing with the fabricators which are its principal customers. So none of the products tried in the Pittsburgh building were actually made by Alcoa. Lately this policy has begun to shift and Alcoa will probably produce and promote an increasing number of products where it feels that no fabricator is adequate to the costly task of pioneering.

In any case, during the past decade the building industry has become the nation's number-one user of aluminum. Alcoa is convinced that its bold experiment effectively played its role.

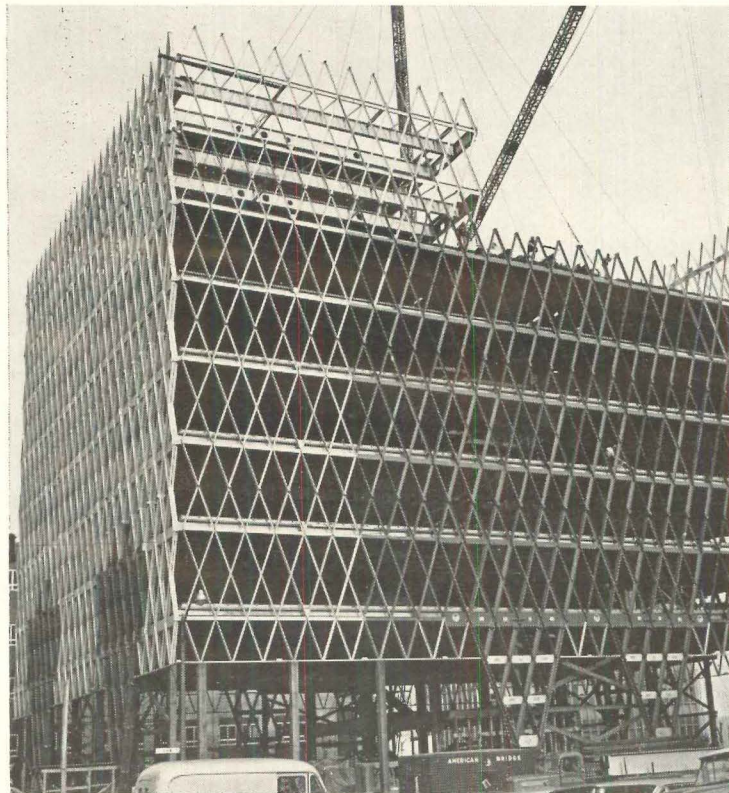
BERNARD P. SPRING



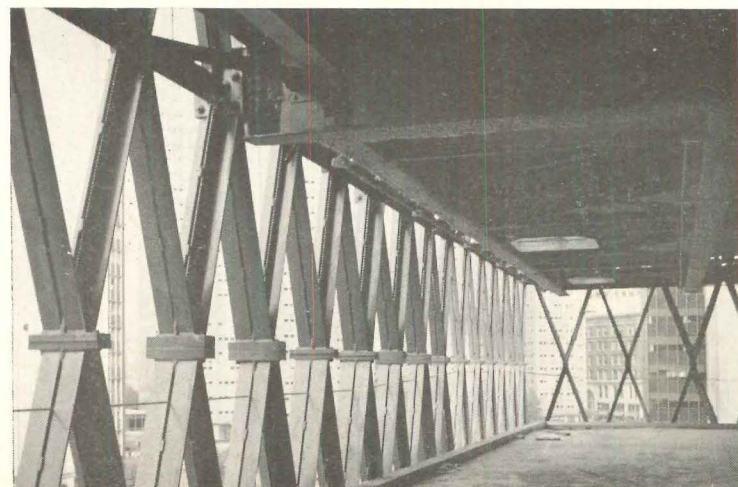
**A new Pittsburgh test:  
steel shows off a wide  
range of strengths in  
the multicolor structure  
of the IBM Building**



*Bearing trusses enclose the IBM building's simple rectangular plan. Framing diagram (above) shows that narrow façades take fairly uniform load; longer façades carry concentrated loads from girders. Left, workers jockey 13 foot 6 inch by 25-foot section into place.*



*Only a hint of the multicolored steelwork pattern comes through in photograph, left. Each stress grade was given a color code to display steel's virtuosity, not as a guide to fabricators. Colors will be swallowed up when delicate framing is covered with fireproofing.*



*Considerable depth of paired 6-inch angles used for framing can be seen in photograph at left. The final overall depth of the outside wall after fireproofing will be a healthy 25 inches. Glass, set 11 inches back from outside face, will be well shaded by bearing mullions.*

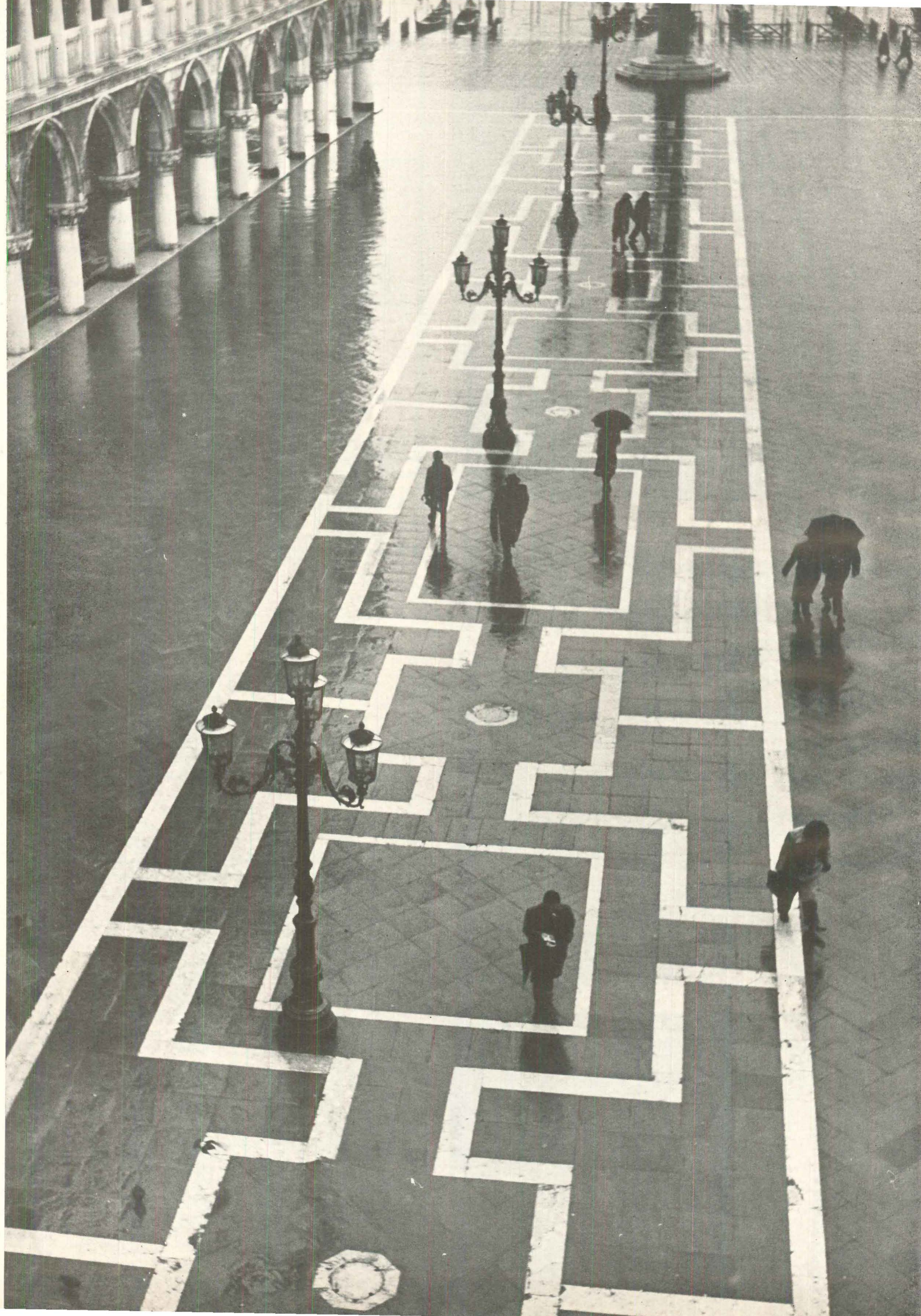
A few blocks south of the Alcoa building, Pittsburghers are again watching an experiment in office-tower design, this one in Technicolor. The subject is steel, used in a full range of five grades on the truss-walled, 13-story IBM building. Each grade is color coded, and at this moment—before the delicate structure is hidden behind sprayed asbestos fireproofing and stainless-steel cover plates—it is an arresting sight.

Designed by Architects Curtis & Davis, the \$6.5 million building presents further evidence of the trend back to the bearing wall. The steel angles of the enveloping trusswork are so close together that, above the fifth floor, they behave like a solid plate. Below, the need to draw the loads together so that they flow down through only eight columns at the plaza level complicates the trusses' stress pattern. Yield strengths of the steels vary from 100,000 p.s.i. at the columns, keeping members near the base relatively light, to the more common 33,000 p.s.i. in connectors and fittings.

The tight spacing of the truss members followed the building's 4½-foot module—and saved an estimated 200 tons of steel by carrying down half the building's loads in tension and compression rather than in bending. Their closeness also meshed with the mechanical engineer's recommendation that glass be kept to 30 per cent of the façade. This sparse glazing allowed use of an economical dual-duct air-conditioning system.

No penalty is being paid for novelty. Total square-foot costs will be about the same as those of IBM's more conventional Gateway Center neighbors, and might have been less if it were not for a few unusual construction problems. The 13½ by 25-foot grid sections were welded together in a specially constructed jig to unusually close tolerances: minus, 1/32 of an inch; plus, zero. (A special permit was needed to truck the huge units from the plant.) And the tight grid meant that all materials had to be brought up through the core instead of through the outside walls.







## WHO'S MINDING THE FLOOR?

The question above can be asked of any American city today. Pavement design has been abandoned to the concrete mixer. Texture, color, and pattern are shunned as needless luxuries—a strange phenomenon, considering that remaining upright requires that the floor be given constant attention.

It was not always so. The floor-scape of the Renaissance, for example, was conceived with the same strength and elegance as its architecture. There is much academic talk today about the revival of the piazza as the “setting” for a building, an anteroom from which it can be viewed and admired. But little else has been done to re-establish the rich relationship between the building and the surface from which it rises. As surely as the elaborate Renaissance exterior used the restrained elegance of the plaza floor as a foil (as in Venice's Piazza San Marco, left), so the chaste contemporary building can gain by contrast with a richly patterned pavement.

Pavement design, moreover, can be more than just an embellishment. Properly used, it is an invaluable tool to the designer of outdoor space. By his choice of materials, he contributes color and texture; by the way he arranges them, the designer can directly influence how the space is used. Appropriate pavement design can relate a building to its surroundings or set it apart, invite or discourage entry, encourage or discourage speed, and direct or divert the eye.

Nor need such effects be limited to formal squares and plazas. As the British Critic Gordon Cullen points out, bland urban pavements have made streets and sidewalks “dividing” rather than “connecting” surfaces; they run like rivers through the city, effectively cutting off one side of the street from the other. Pavement design can perform at least a visual reunification.

Mr. Zion is a principal in the New York firm of Robert Zion-Harold Breen, site planners and landscape architects, whose practice extends from schools, shopping centers, and urban renewal projects to the award-winning U.S. National Exhibition in Moscow.

Why aren't we minding the floor? Lack of funds is most frequently given as the reason, but there is a wide variety of inexpensive materials on the market demanding only imaginative use to provide interesting pavements. For the most part, the European pavements shown at right are of everyday materials, yet they are arranged with rare, and sometimes unconscious, art.

Aside from imagination, of course, successful pavement design requires a recognition of certain functional factors. These are a few which are often neglected:

1. *Durability.* Spalling and cracking should be guarded against, especially if terrazzo or cast stone is to be used. Maximum weight loads must be determined in advance and appropriate reinforcement included. Exquisite aggregates are worthless against a marred background.

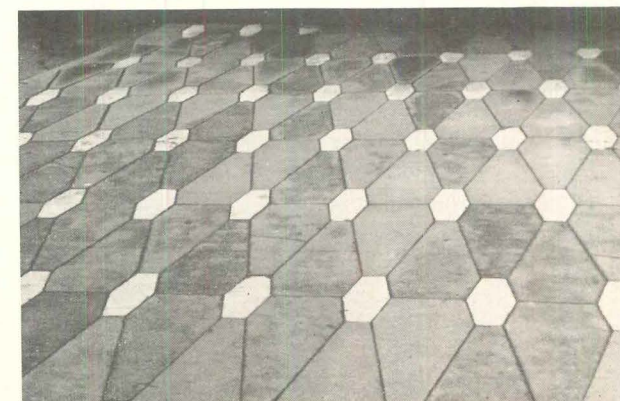
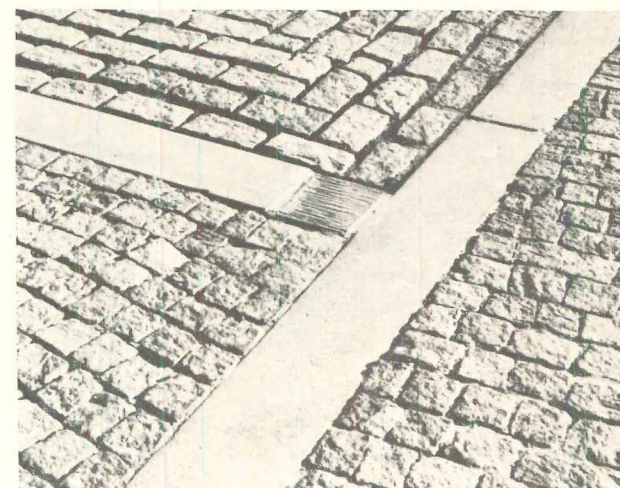
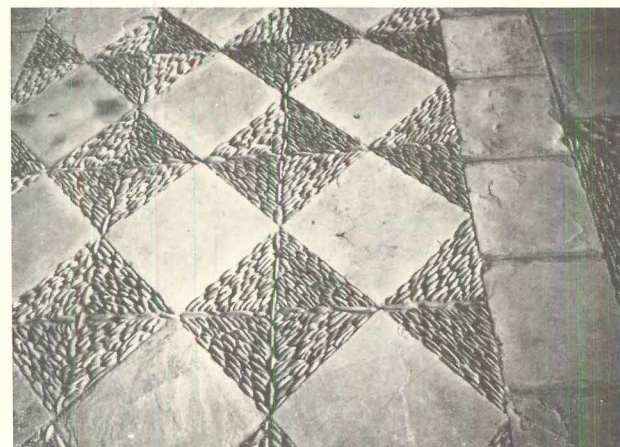
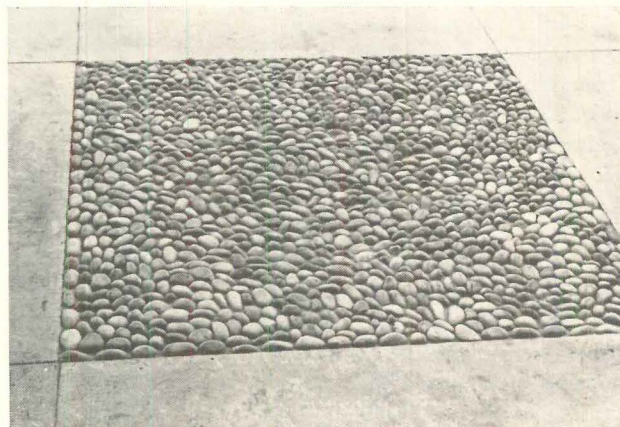
2. *Maintenance.* Materials which conceal dirt are preferable if the pavement is to be given hard use and only sporadic maintenance. A material such as asphalt block, whose color minimizes the ubiquitous chewing-gum stain, has much to be said in its favor.

3. *Replacement.* Networks of utilities run beneath most city pavements, and they inevitably require periodic repair—as does the pavement itself. This fact suggests the desirability of using small blocks laid on a sand base so they can be pried up by one or two men and replaced without creating an unsightly patchwork. Cast-in-place concrete, incidentally, may be the easiest kind of pavement to install, but it is usually the most difficult to remove and replace.

4. *Walking.* If the designer hopes to encourage walking, the softer and more resilient materials, such as wood and asphalt, should be considered first.

5. *Glare.* Many a failing shopping center attests to the false economy of plain, raw concrete, which shines blindingly up at customers on a sunny day.

6. *Sound.* Nothing can cast a





**A pleasing floorscape is more a question of thought than of money—as these uses of low-budget materials show.**

pall over an evening stroll quite so rapidly as the clacking of heels on an unyielding pavement. Since it is unlikely that the American woman can be talked into sneakers, outdoor acoustics are worthy of the designer's attention.

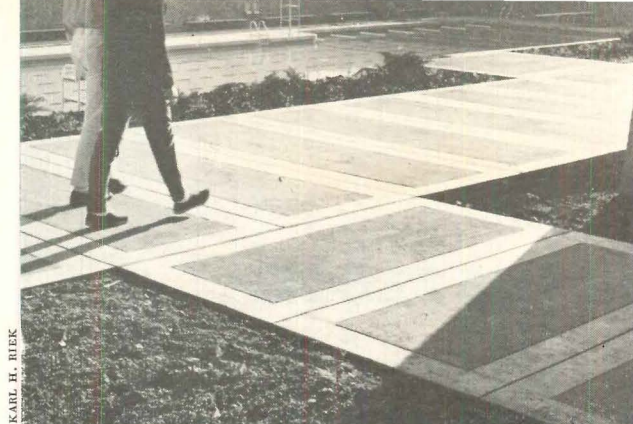
Several of these functional considerations appear to argue against concrete, yet concrete has the almost irresistible lure of economy. We would all like to make more of the warmth and inherent richness of natural stones, but their use is restricted by cost. (Restricted, but not abandoned: natural stones can be used for insets or "rugs" in the basic pavement for design emphasis.)

Even concrete, however, has unrealized potential. Perhaps the key to improvement of the American floorscape lies in the wider use of concrete paving blocks.

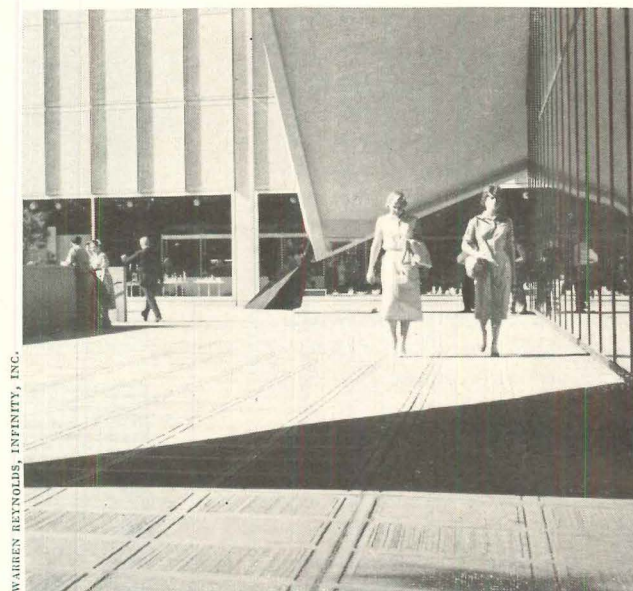
Paving blocks are almost universally used in European cities. Sweden has developed a machine which turns them out on the job site at the rate of one a second—and at a cost scarcely higher than the plainest cast-in-place concrete. A concrete block of manageable size, with a handsome aggregate exposed, would offer the advantages of low installation cost, ease of repair of both the surface and the utilities underneath—and almost unlimited possibilities of color, texture, and shape.

Even now, the humble asphalt block, so long on the market (the Fifth Avenue sidewalk shown on the opposite page was laid some 28 years ago), offers some of the same virtues despite limitations of size and color. It is also quiet underfoot, resilient, nonreflective, and resistant to a wide variety of stains.

Pavement design was once considered an integral part of the architecture of both buildings and cities. It is a concept worth reviving, and not just for the designers' self-gratification. It is not only the auto that has made life unpleasant for the downtown pedestrian—dreary pavements have been subtly adding to his unhappiness for years. Our neglect of the floor has resulted in an ugliness difficult to escape.



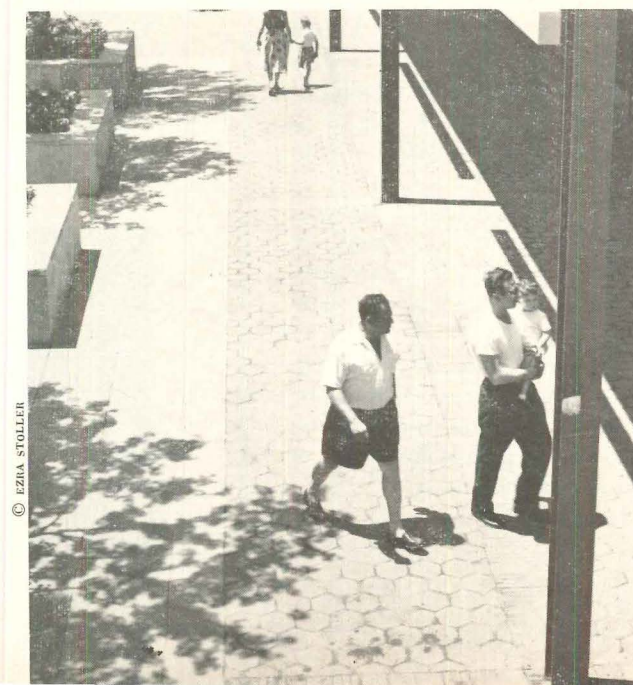
KARL H. RIEK



WARREN REYNOLDS, INFINITY, INC.



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*Handsome walkways on the campus of California's Foothill College (top left) were economically built of brush-textured precast concrete slabs set in trowelled cast-in-place borders. Underneath are tunnels of water and electrical lines; the slabs can be easily removed for their repair. Elsewhere, the crisp sidewalk pattern contrasts with brick terraces and winding, wood-framed asphalt paths. Architects: Kump Associates. Landscape architects: Sasaki, Walker & Associates.*

*A simple, three-step operation gave the floor of Zeckendorf Plaza in Denver its interesting but unobtrusive pattern (second photo, left). The concrete was cast in place, then given a broom finish with the texture alternating in direction from square to square. The squares were marked off with a specially made steel hand tool which applied grooves and edge bands at the same time. Used for both the plaza and sidewalks, the surface cost less than 85 cents per square foot. Architects: I. M. Pei & Associates.*

*At Roosevelt Field Shopping Center, L. I. (photos, left) Zion & Breen used inexpensive hexagonal asphalt blocks as the basic pavement, but brought richer materials in as accents. One small, elegant court is of granite setts laid in a radial European pattern, and the asphalt mall is interspersed with handsome rectangular "carpets" made of crab-orchard stone. Architects: I. M. Pei & Associates.*











## TRIM ADVERTISING OFFICE

On the old-fashioned drawing board shown at right is laid out some of today's most coolly modern advertising ("Who says a good newspaper has to be dull?"; "Who was that tomato I saw you with, Wolf Schmidt?"). The board belongs to George Lois, creative director and partner of Papert, Koenig, Lois, Inc., a spectacularly successful young agency which, since it first offered stock to the public this fall, has become the talk of Wall Street as well as Madison Avenue. On the twenty-sixth floor of the remodeled General Dynamics Building in Manhattan's Rockefeller Center (FORUM, March '61), Lois works in one of the four corner offices reserved for the agency's management (for Frederic Papert's corner, see photo opposite).

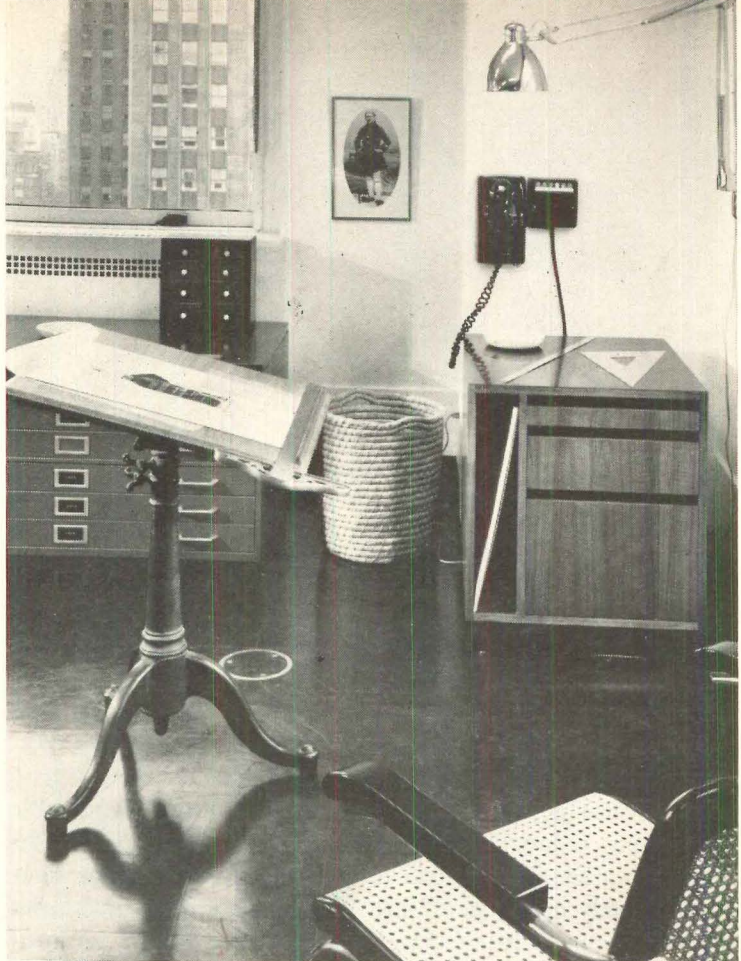
The production of ads is a hectic business, one that can turn a thoughtlessly designed office into shambles in a matter of minutes. To counteract this, Architect Donald W. Porter, working with Lois, created a rigidly ordered plan, using fine materials, precise details, and spare furnishings as a backdrop for busy people.

The plan, which bears a striking resemblance to PKL's own organization chart—Lois himself likens the plan to that of a battleship—is both logical and efficient (right). The "command posts" are located at the four corners of the floor; stretching away from each one along the perimeter are smaller offices, closely related to it.

Lois, who supervises all the agency's art work (as well as producing a good part of it), sits in the northeast corner. In one direction, off a broad display corridor, are his four art directors, whose windows gain north light and a fine view of the Center's plaza skating rink; in the other direction is the production department, responsible for turning out the finished ads.

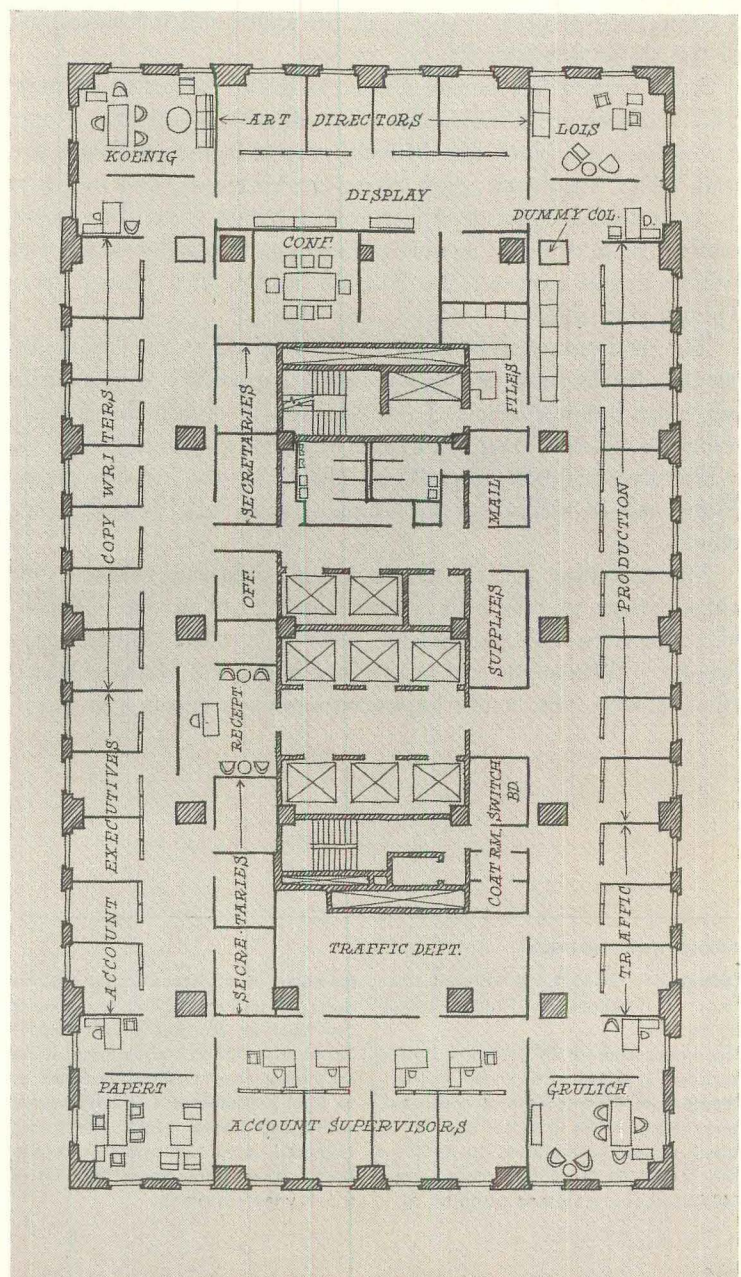
Julian Koenig is both the agency's president and its leading copywriter; the seven other copywriters are strung out along half of the west wall, adjoining his office in the northwest corner. Board Chairman Papert, who is involved in all aspects of the business, and Norman Grulich, the marketing expert, occupy the other corners, with four account supervisors between them. Additional account people sit to Papert's north, traffic men to Grulich's north. (Media, accounting, and television departments take up parts of two adjacent floors, pending the time when PKL is able to assemble a second full floor.)

Inside the rectangular doughnut formed by the perimeter offices is a continuous corridor. On its long runs, its apparent width (actually 5 feet 8 inches) is narrowed considerably by



PHOTOS: BEN SCHALL

Still life: old drawing board, Breuer chair, tabouret for art supplies





twin rows of columns (two of them are dummies, added for the sake of visual balance—see plan). The shorter east-west corridors are wider (11 feet) and column free; the one serving the art directors is used as a display area for the agency's print advertising, and has a handsome tilt-top light table for viewing photographic transparencies (photo, right). Its identically dimensioned twin at the opposite end of the floor is PKL's only open "pool" area, housing the four secretaries of the account supervisors. Other secretaries are grouped around the compact central core, directly across the aisle from perimeter offices. At the north end the interior space contains a conference-projection room; at the south end it houses part of the traffic department.

Aside from a few personal touches in the executive corners, PKL's offices are deliberately—and effectively—stark. Floors throughout are black tile. Movable metal-frame partitions are paneled in translucent glass along the corridors, and in white gypsum board between offices. Light comes from fluorescent troffers in a dropped acoustical ceiling. Most doors are full ceiling height and, off the elevator lobby, they are all glass (photo, far right).

The antiseptic quality of the offices is enhanced greatly by precise details such as the hardware (opposite). Furnishings are spare but well selected (in addition to designs by Breuer, Saarinen, Eames, Zographos, and Florence Knoll, they include a tabouret designed specially by Porter for the art directors). Plants are so sculptural they hardly seem real (see Papert's office).

Intentionally, PKL's offices are a tightly organized but empty stage, on which the normal activity of people will provide the color and the drama. Says Lois, with evident satisfaction: "When you see a girl in a red dress walking down the corridor, you really know a woman is coming at you."

#### FACTS AND FIGURES

Offices for Papert, Koenig, Lois, Inc., 9 Rockefeller Plaza, New York City.

Designer: Donald W. Porter. Consulting architect: Charles James Koulbanis. Engineers and contractors: Rockefeller Center Inc. Cost, which is included in PKL's rent of \$6.85 per square foot, was \$48,500 above standard building al-

lowance (floor area: 12,500 square feet). Another tenant had leased the floor at the same rent, which included a \$35,000 allowance above standard, then passed its lease on to PKL. Biggest extras were wood walls and doors, black tile floors, recessed base on plaster walls. PKL leases its furniture on a three-year contract.

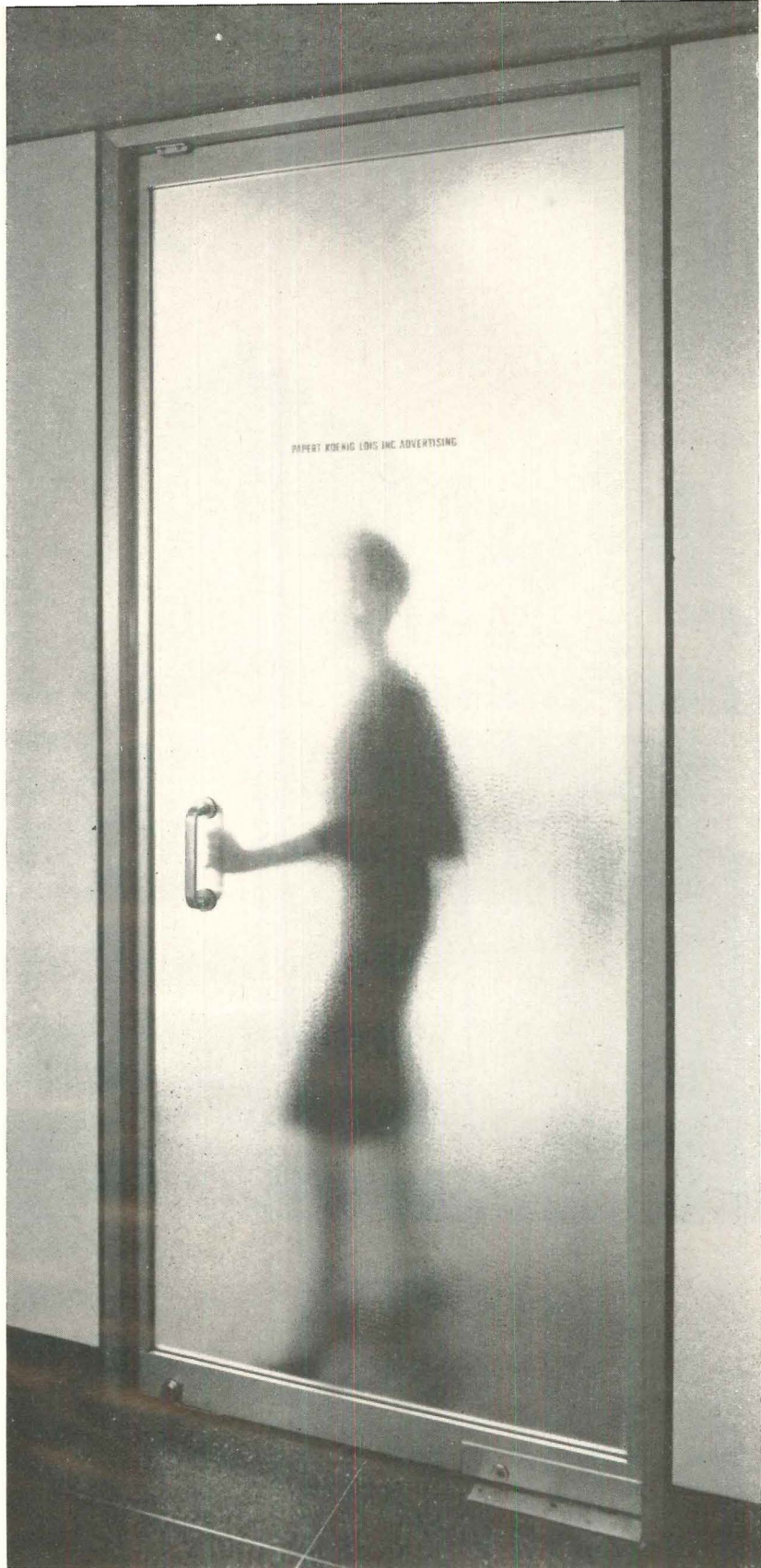


*Display corridor has a tilt-top light table; below, copywriters' row*

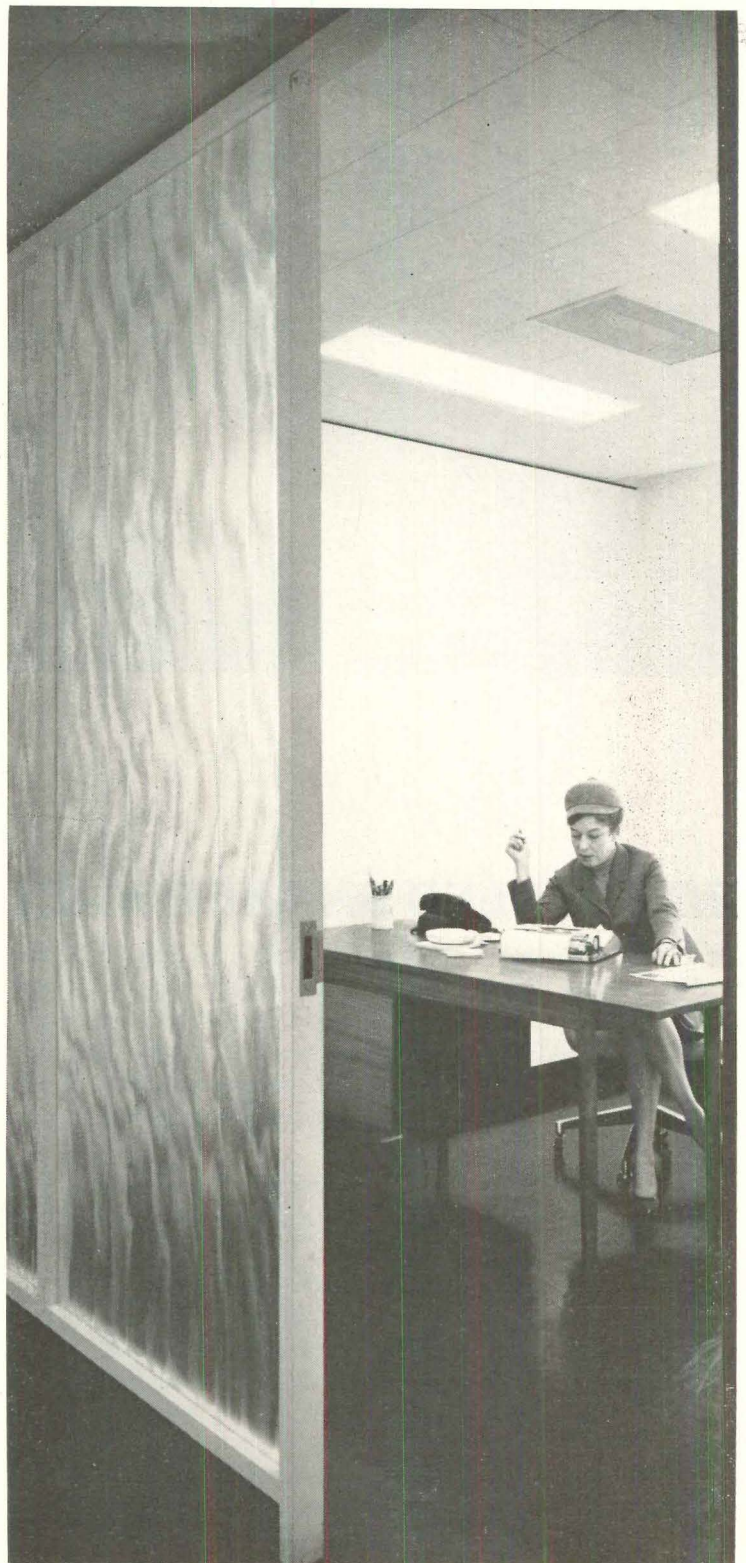
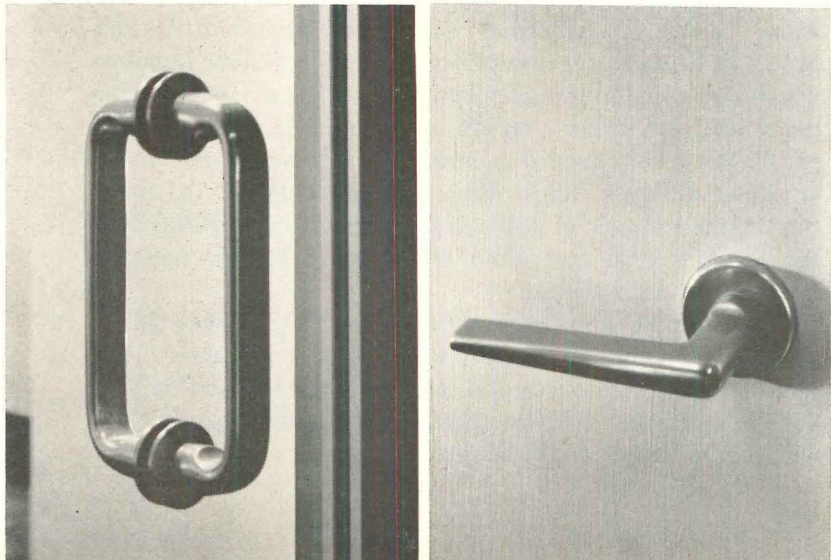


PHOTOS: BEN SCENALL





*Details: door knobs, partitions—and a tweed-helmeted writer at work*







## REMODELED SHAKER HALL

In 1870, when the view above was taken, the small Shaker settlement near New Lebanon, N.Y., was strung out on both sides of a dirt road. Today, almost a century later, the road is still unpaved. The Shakers, however, are gone. In their place is the Darrow School, a private secondary school of 175 boys, which purchased the 400 acres and 40-odd buildings in 1938.

On the surface, little has changed. In the years since Darrow took over, about half the original buildings have been torn down because of dilapidation. The other half have been carefully remodeled to provide modern interiors, while leaving exteriors intact to preserve the school's historical flavor. Thus Darrow, though it is nondenominational and has no official relationship to the Shakers, has become, in a way, a lasting tribute to the considerable Shaker talent for architecture.

Latest step in the continuing rebuilding program is the remodeling of the Shaker Meeting House (left center in photo above) into the school's new library.

The Meeting House was completed in 1824. When the school decided to remodel it 135 years later, its remarkable structure was still sound. But more important, it enclosed a great interior space, well lighted by many tall windows which, even after remodeling, still have the original small panes of imperfect, wavy glass.

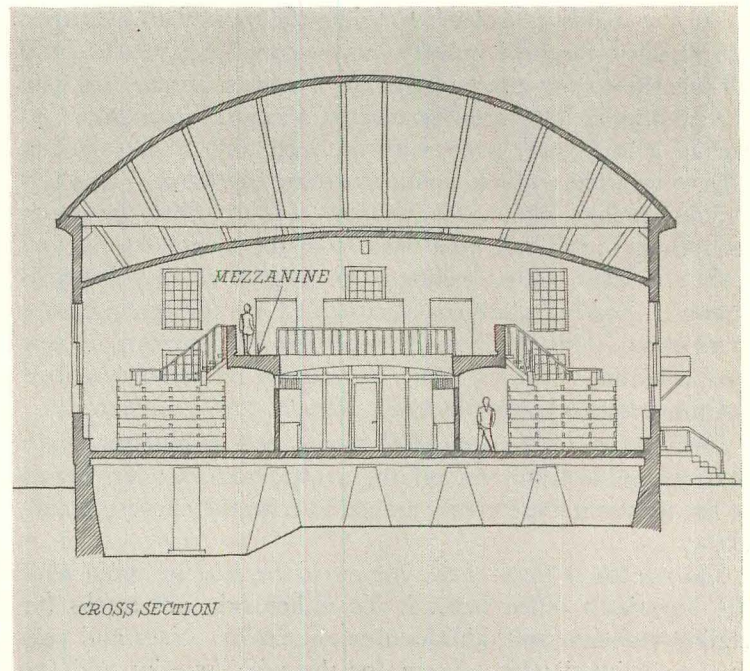
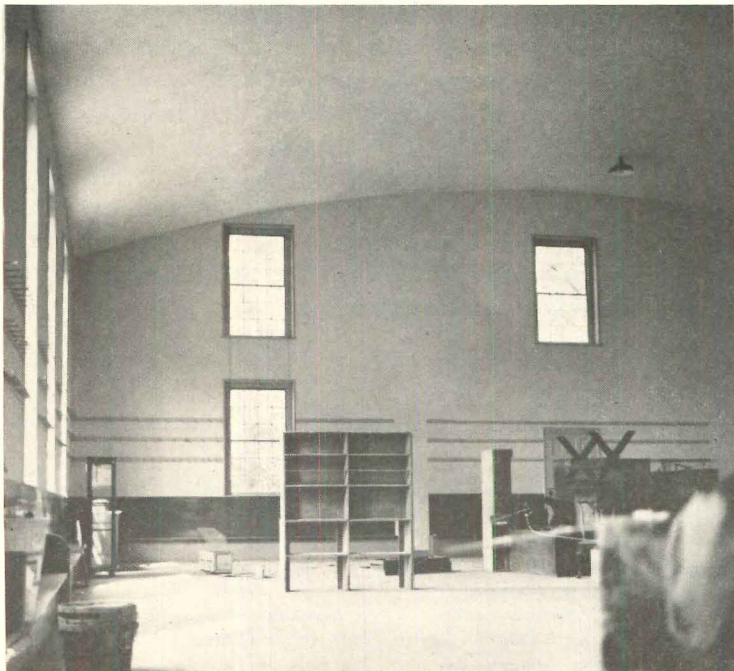
As late as 1959, the potential of the Meeting House was being wasted. At one point used as a gymnasium, it then served as a warehouse for pieces of antique Shaker furniture which had come to the school with the original purchase. But the school, which grew rapidly after the War from its initial enrollment of 35, needed a library more urgently than a collection of antiques. Thus, when Darrow auctioned the furniture in the summer of 1961, part of the money (\$16,000 of the \$75,000 total cost) and all of the space for the new library became available.

The problem for Darrow Alumnus ('50) James Baker, who designed the remodeling, was to add a necessary 2,000 square feet of floor space and introduce lighting and modern library equipment without destroying the original space, all within a severely limited budget.

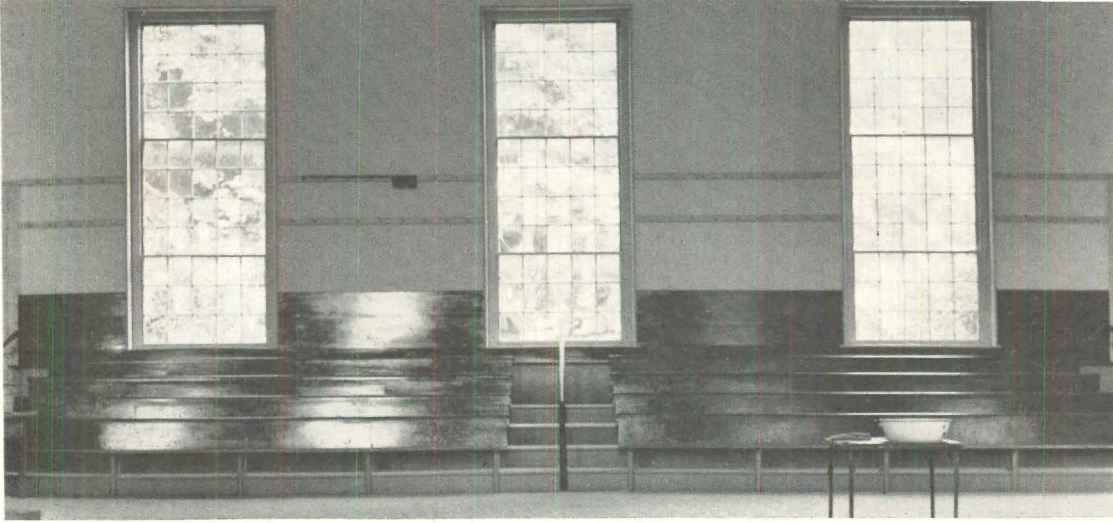




*New library interior was created by adding an open mezzanine (above) within the ample space of the old Shaker Meeting House (see below)*







*High, triple-tiered windows (above left) have original panes of wavy glass. Mezzanine ceiling (left) is gently vaulted in one direction to echo curve of the roof.*

*The mezzanine itself stops well short of the long sidewalls and the lofty ceiling (right). The open well looks down into the main ground-floor reading room.*

At first, Baker considered rimming the room with balconies. He rejected the idea quickly, however, since it would have all but ruined the effect of the tall windows. Instead, to gain the additional floor area he erected a central mezzanine, 80 feet long by 30 feet wide, with an open well 20 feet square. The mezzanine, which contains study carrels and brightly colored lounge chairs for relaxed reading, fills the room lengthwise but is held well back from the long sidewalls and from the lofty curved ceiling. The mezzanine thus becomes simply a floating platform, surrounded by the space of the great room. This platform is supported by two rows of new steel columns, 18 in all, which are carried on paired channels spanning between the old brick piers in the basement.

Twin stairs, of the same dark wood used for railings, reach the mezzanine from just off the central well. Undersurfaces of the mezzanine are gently arched to echo the curving ceiling above.

On the lower level of the library is the reading room with the librarian's office beyond. To either side are stacks for 26,000 volumes, and additional study carrels. Walls and ceiling are painted white except for the window trim and the

coat-peg boards which are still the original blue.

Most of the artificial lighting comes from warm incandescent downlights recessed in the ceiling. Each carrel, however, has its own fluorescent fixture and there are also specially designed lights on both ends of each stack.

Remodeling work on the smaller wing, just off the main space, is still underway. When completed, it will serve, on the first floor, as the main entrance to the library. Conference and audio-visual rooms will occupy the second floor, with a two-story librarian's apartment above.

#### FACTS AND FIGURES

C. Lambert Heyniger Memorial Library, New Lebanon, N.Y.  
Owner: Darrow School.  
Designer: James Baker. Structural engineer: Henry A. Pfisterer. General contractor: Darrow School.  
Remodeling cost: \$75,000 (construction, \$53,580; furnishings and

equipment, \$13,544; fees, \$7,876).  
Building area: 18,000 square feet (10,000 square feet remodeled).  
Cost per square foot: \$5.36 (about \$425 per pupil).  
Financing: donations by alumni and friends, plus \$16,000 raised at auction of furniture.

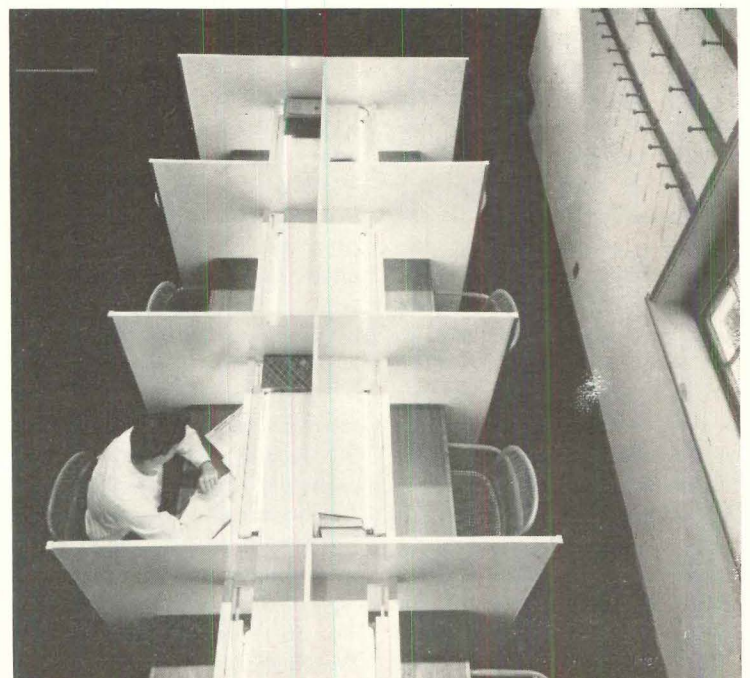
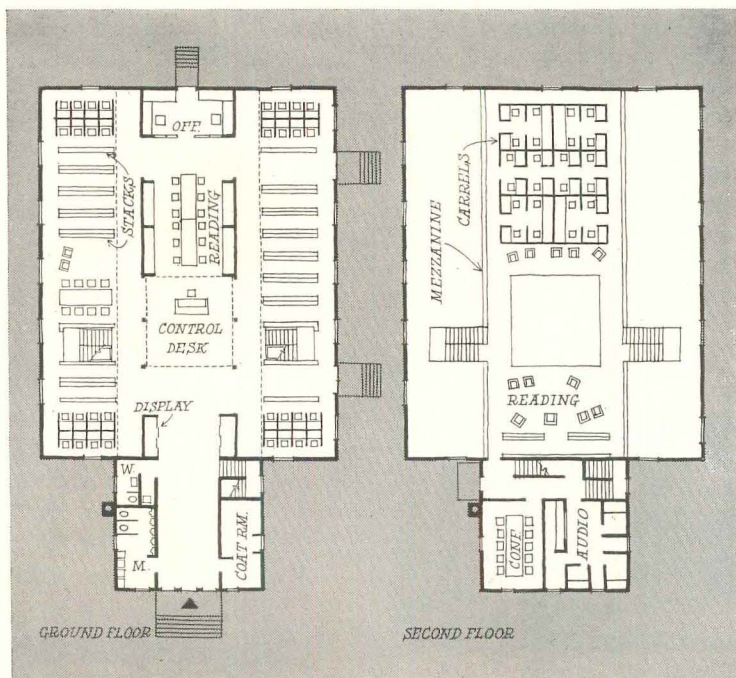




PHOTOS : LOUIS REENS

Study carrels occupy four corners of ground floor, half of mezzanine

Carrels are of plywood painted white, each with a fluorescent light





GEORGE CSEJNA



#### MONTREAL MOVES FORWARD

The fact that history does not go by rules, and that generalizations are dangerous to make without the facts, was nicely illustrated in Montreal a little while back. This was at the official opening of the Place Ville Marie project by William Zeckendorf and his various partners, Canadian and English.

Now here was the tallest, largest building in the central area of a large city, one of a group yet to be completed, and the one which, owing to its position, surrounding open space, and style, has become the focal building of the sky line. And this crowning monument was created by promoters, designed for promoters, and built by promoters, if that is what you would like to call them.

This is remarkable. For, generally speaking, critics have drawn a mental line between corporate clients on one side, who build on their own account and are filled with the pride of institution, and, on the other side, promoters, who build for general consumption by miscellaneous occupants, watching the dollars, intent primarily on seeing how much of a profit can be extracted out of the building operation as such. Yet at the opening of Place Ville Marie, when William Zeckendorf gave

the first speech that, within the memory of reporters, he had prepared in advance, he emphasized that he (a promoter) was proudest of having given Montreal a beautiful ornament. And indeed the years of painstaking work of Zeckendorf's architects, Ieoh Ming Pei and his partner-in-charge, Henry N. Cobb, made Place Ville Marie a fitting mark for "no mean city."

There are some critics who believe that the architectural quality that is achieved in a building venture can be predicted out of well-known general principles, e.g., that no really good architecture can be achieved through speculative building. There are others who prefer to observe the world as it really is, full of unexpected events and special conjunctions, which reveal to alert minds that there are new possibilities. Zeckendorf may be an unusual promoter-builder but he is proving that good architecture is good business for him, and therefore his achievement makes it obligatory on the architectural profession to convince other promoters that they too can benefit. Incidentally, a good deal of the good architecture of the past was "speculative," including the famous city of Bath, England, and French *places* or squares such as

the Place des Vosges and the Place Vendome.

Congratulations to Bill Zeckendorf, Ieoh Ming Pei, Harry Cobb, and their associates, and to the city of Montreal.

#### VIRGINIA MOVES FORWARD

It was this editor's good fortune to see various parts of Virginia this past month, and the rewarding experience was to observe the accelerating movement in this great state to join up with those who are in the main stream of creation.

At a school like Virginia Polytechnic Institute, up in the handsome hills of southwest Virginia, the Department of Architecture seemed to be a lively place; and, even though that school is not allowed to take a share in the building program of the Institute, the way the architectural schools at Harvard and Yale do, there has already come the first break in the solid granite Military Gothic line with which the Institute is fortified against rifle fire. This break is made appropriately by a student-union building.

As for the houses that teachers in the Department of Architecture have built for themselves, they include some of front rank. Leonard Currie, chairman of the department, and his wife Virginia, have just completed a beauty of a wide-terraced, glassy, but soft-faced and handsomely detailed house (photo) which, alas, they must now sell because Currie is leaving to take charge of architecture on the new campus of the University of Illinois in Chicago.

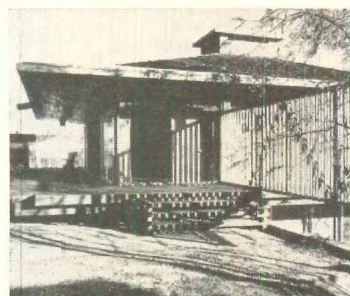
At the University of Virginia, Jefferson's university at Charlottesville, the boys in the school seem plenty alert, but the university itself has moved slowly. Now, at last, the first twentieth-century buildings are in prospect. These

are a life sciences building by Ballou & Justice of Richmond, with Stainback and Scribner of Charlottesville associated architects, and a chemistry building by Stainback and Scribner. Louis I. Kahn of Philadelphia is architect for design. This is real progress, nothing so important as a fresh start.

For a time it seemed as if even Mr. Jefferson had been much too radical for his own university. A visitor's tour led by William O'Neal, an authority on Jefferson's Lawn, revealed that the longer the maintenance department had Jefferson's colonnades in hand, the more they began to undergo little changes reverting towards Georgian—a style that Jefferson himself happened to despise. Thus the once flat-topped colonnades got themselves crowned with pitched roofs and the pavilions (or faculty houses) were deprived in time of roof parapets that were part of Jefferson's thinking. Also, where Jefferson had connected his roof-walk colonnades to the houses by mere little bridges, so that light could fall behind the colonnades on the entrance features of the houses' first floors, solid porch roofs were built by the maintenance people, darkening the entrances and obliterating one of Jefferson's fine modernisms.

In the same way, the ranks upon ranks of new buildings built flanking the Lawn have become imitations of imitations of imitations, ever feebler, as if to re-emphasize the Biblical truth that he who concentrates on hanging onto only what he has will lose even that.

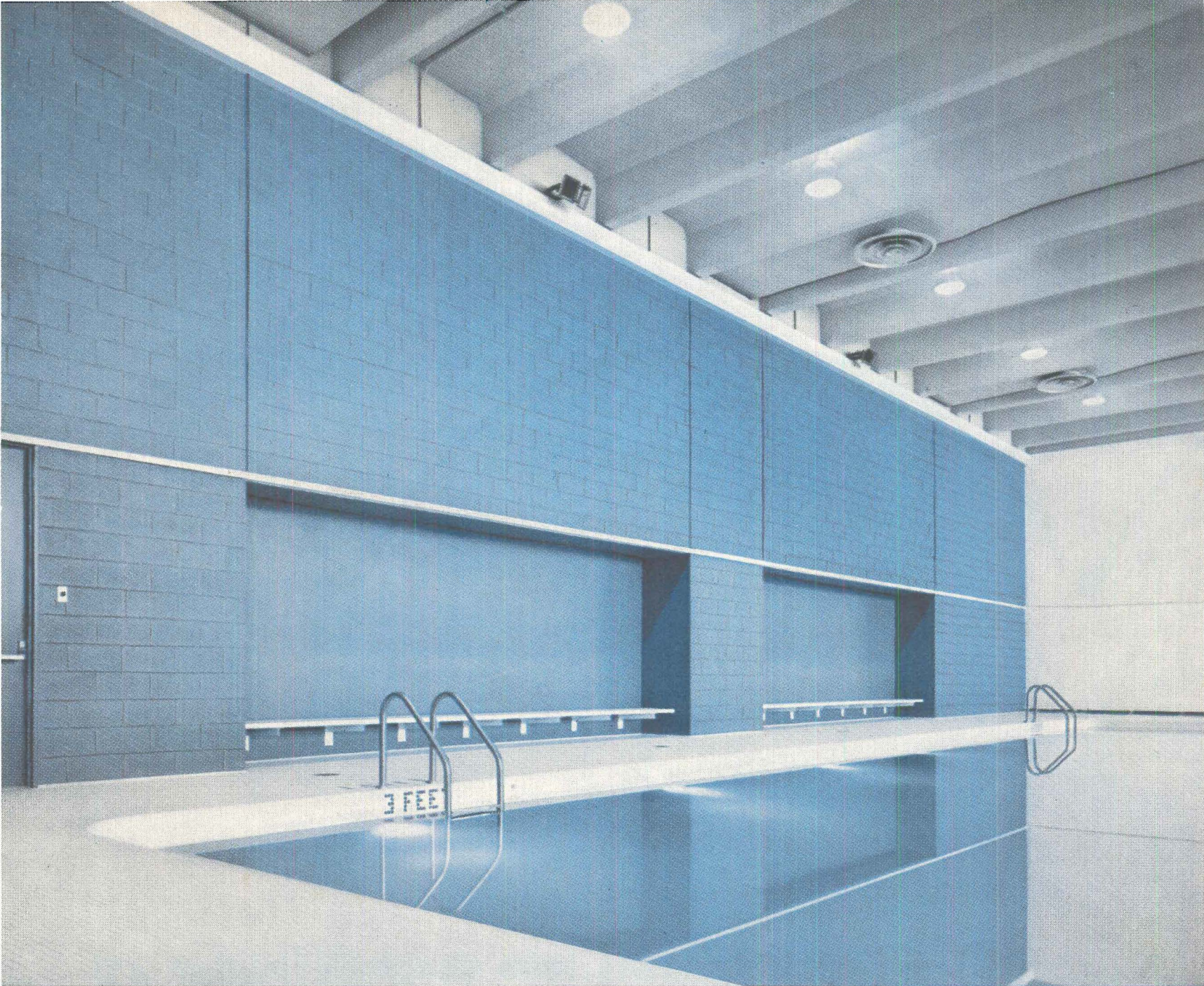
It will be the great service of the new generation of Virginians—and surely nobody else could do it—to rise up and speak for the new life which is in evidence here and there all through the area. Who is there among us who has not at some time in his history suffered a galling defeat? The only culpable thing is to decide to give up all new ventures so as to weep at the graveyard.



DOUGLAS HASKELL

Douglas Haskell





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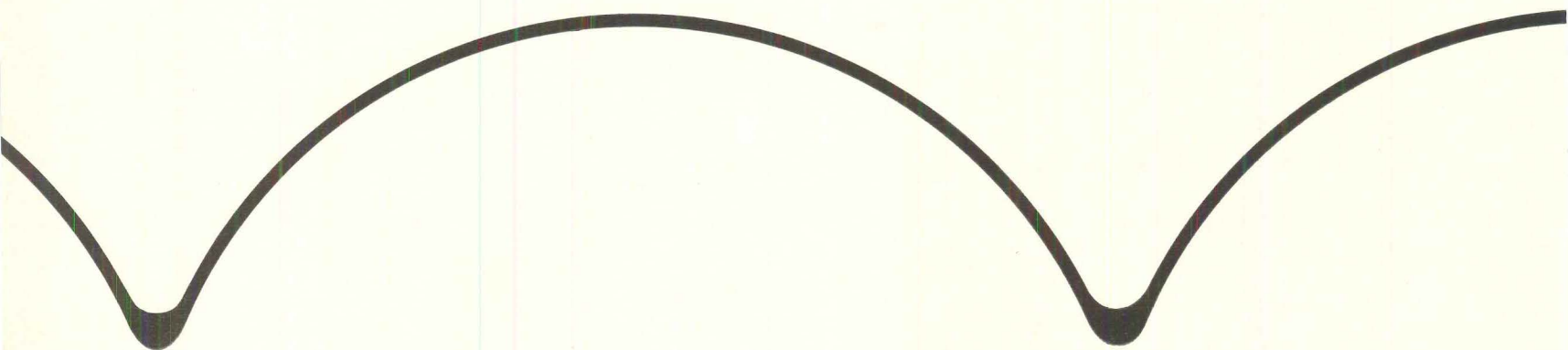
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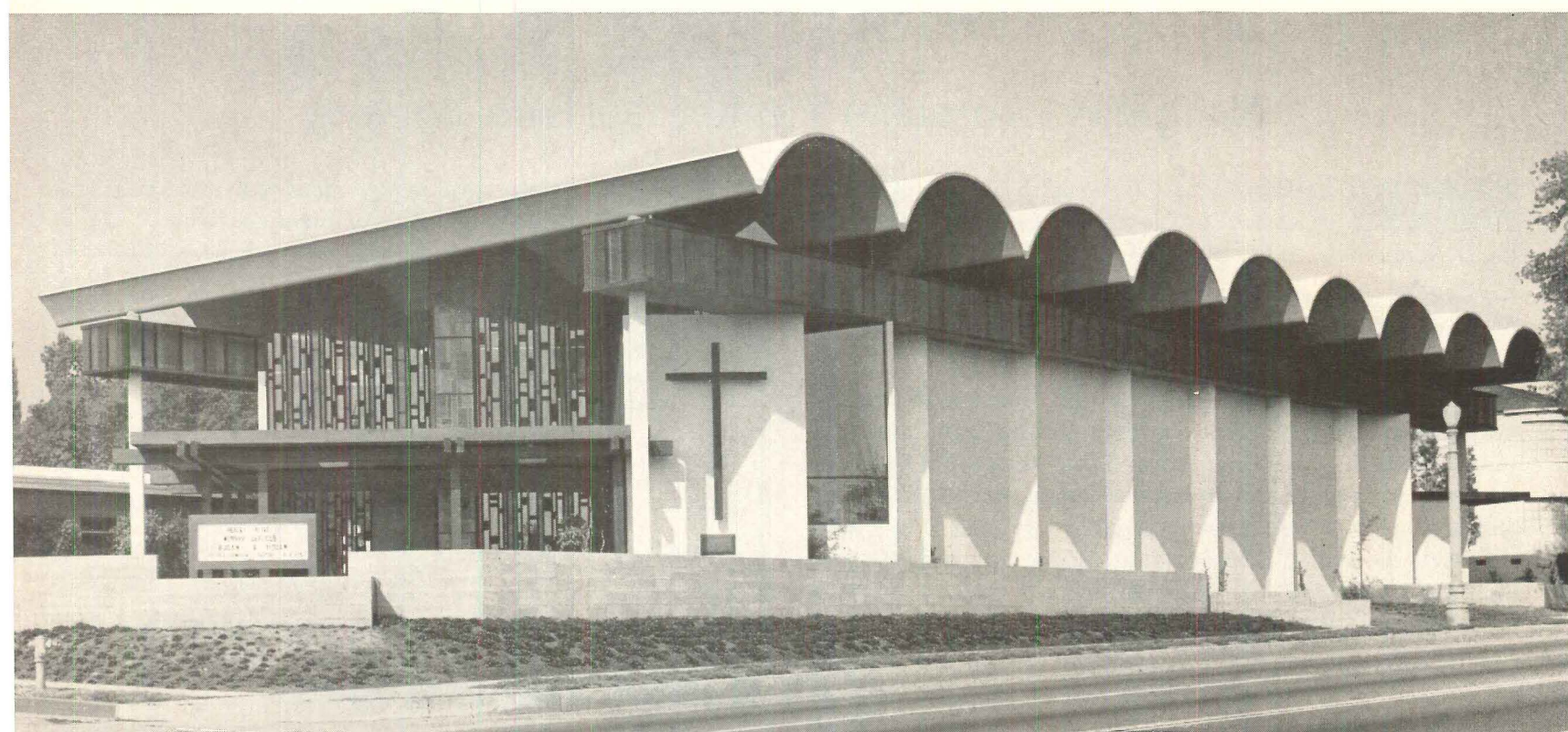
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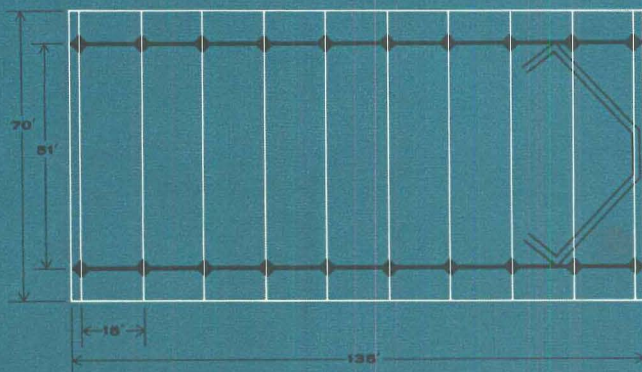


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NINE PLYWOOD VAULTS, seeming to float on panels of light, give this church its simple grace and elegance. They provide the additional, practical advantages of construction economy and a 51x135 ft. support-free interior.

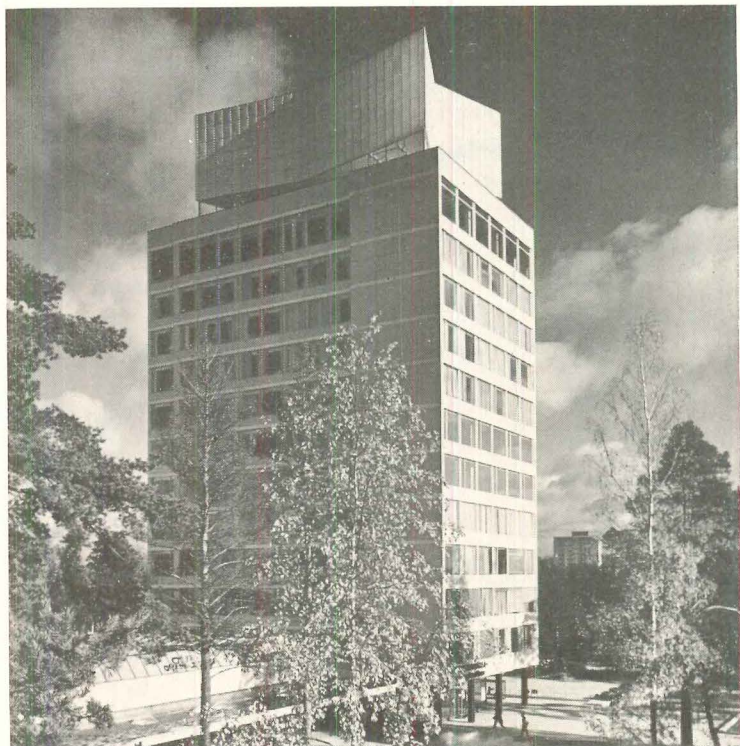
Each vault rises to an apex of 27 feet and spans an area 15x51 ft.—longest span on record for an unsupported plywood vaulted roof system. The roof components were prefabricated, and were so carefully engineered that installation took only seven hours.

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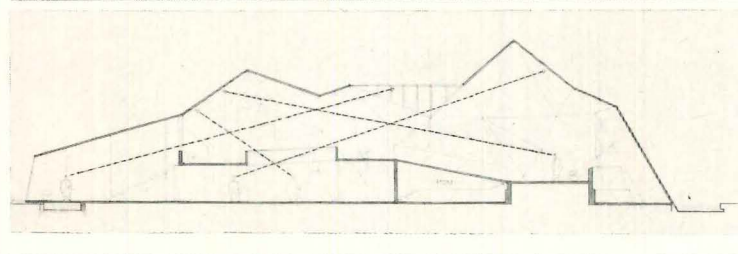


**INDIAN PAVILION.** A shell of reinforced concrete, resembling a gigantic crumpled paper bag, covers a show-stopping exhibit center for Hindustan Lever at the Indian Industries Fair in New Delhi. The

shell was formed by placing steel reinforcement on light formwork and then spraying on a top layer of concrete. Architect: C. M. Correa. Structural engineer: M. R. Mendiratta.

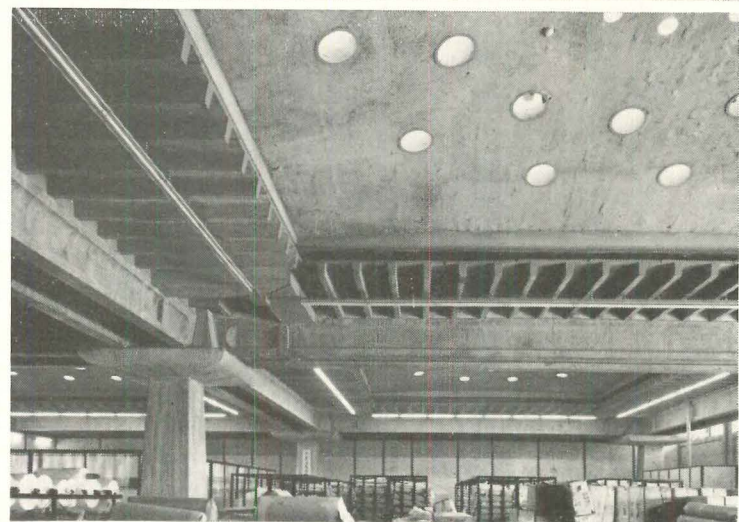
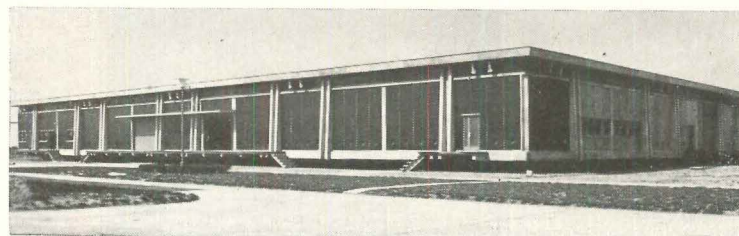


STUDIO NEW LIGHT

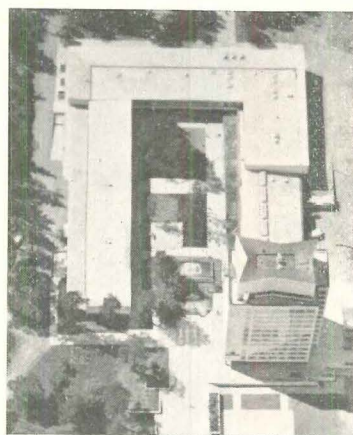


**JAPANESE FACTORY.** "New architecture for a new company and a new industry" was Architect Ichiro Ebihara's goal in designing a factory for the Nihon Vilene Co. (synthetics) in rural southern Honshu. The first stage of con-

struction (below) combines prestressed and precast concrete; the former is used in beams and girders while the outside walls are of precast concrete slabs with mortar calking. The roof shell (see lower photo) was built of cement board.

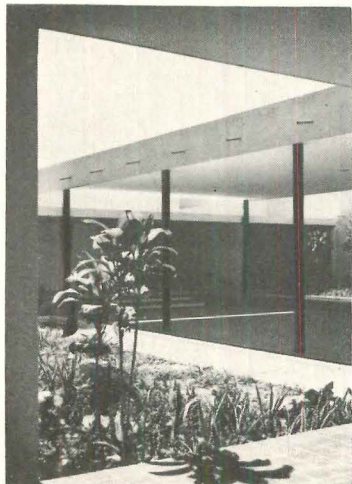


PHOTOS: SHINKENGIKU-SHA CO., INC.

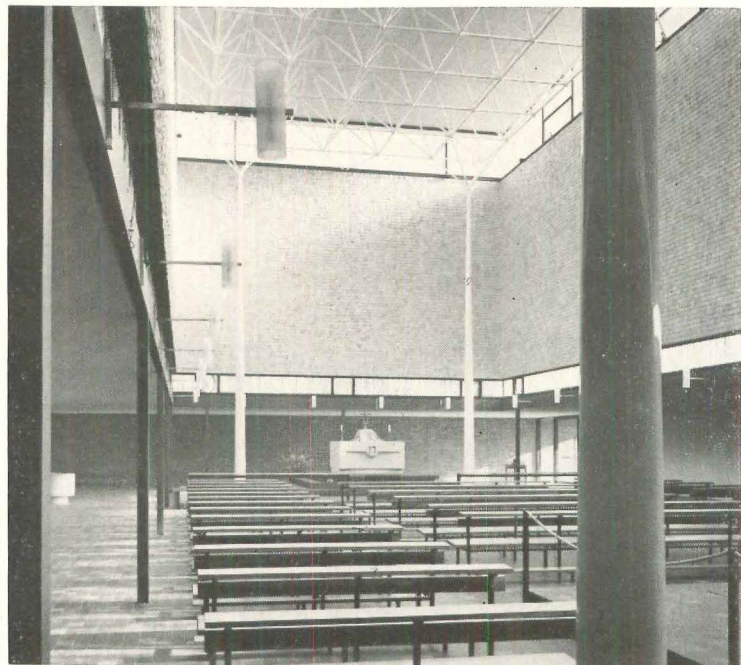


**FINNISH CENTER.** This coolly graceful civic and commercial center by Architect Aarne Ervi is the focal point for Finland's new garden city of Tapiola. Twenty shops varying in size from kiosks to small department stores are clustered at the base of an office tower in a U-shaped scheme (aerial photo, left). The 12-story tower houses banks and government offices and is topped by a screen structure around an elevated machinery core, with racks on its polygonal outer skin for illuminated displays.

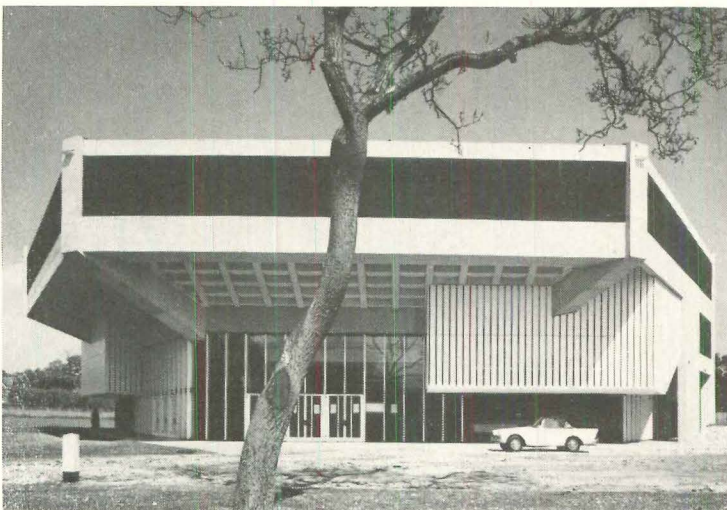




**BRAZILIAN SCHOOL.** The scale of the new capital city of Brasilia can be overwhelming, particularly to a young child. But the prototype elementary school shown here, which serves one of the vast residential "superblocks," is far from terrifying. The architect, Wilson Reis Netto, assistant to Oscar Niemeyer, has produced an intimate and serene environment by walling out the surrounding city and placing classrooms next to landscaped interior courts (left). The one-story building has a double roof, formed by two layers of concrete, designed to keep the interior cool.



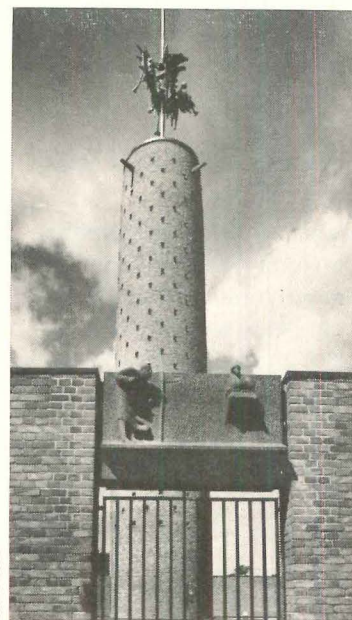
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**ENGLISH THEATER.** A glittering repertory company, headed by Sir Laurence Olivier, last summer inaugurated a drama festival to be held annually in Chichester's new Festival Theater. Designed by Architects Powell & Moya and Christopher Stevens, the theater

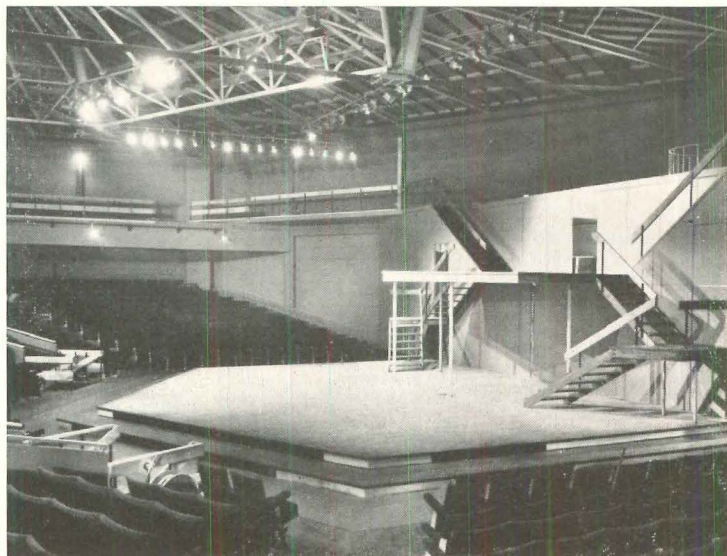
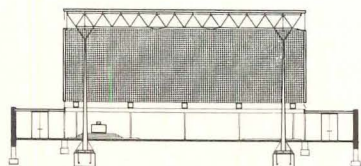
is a deft combination of the new and traditional. The hexagonal auditorium, which is cantilevered above a ground-level foyer, is supported by reinforced concrete ribs. But the apron stage (below) is a direct descendant of the famed Globe Theater.

END



INCE ROFF

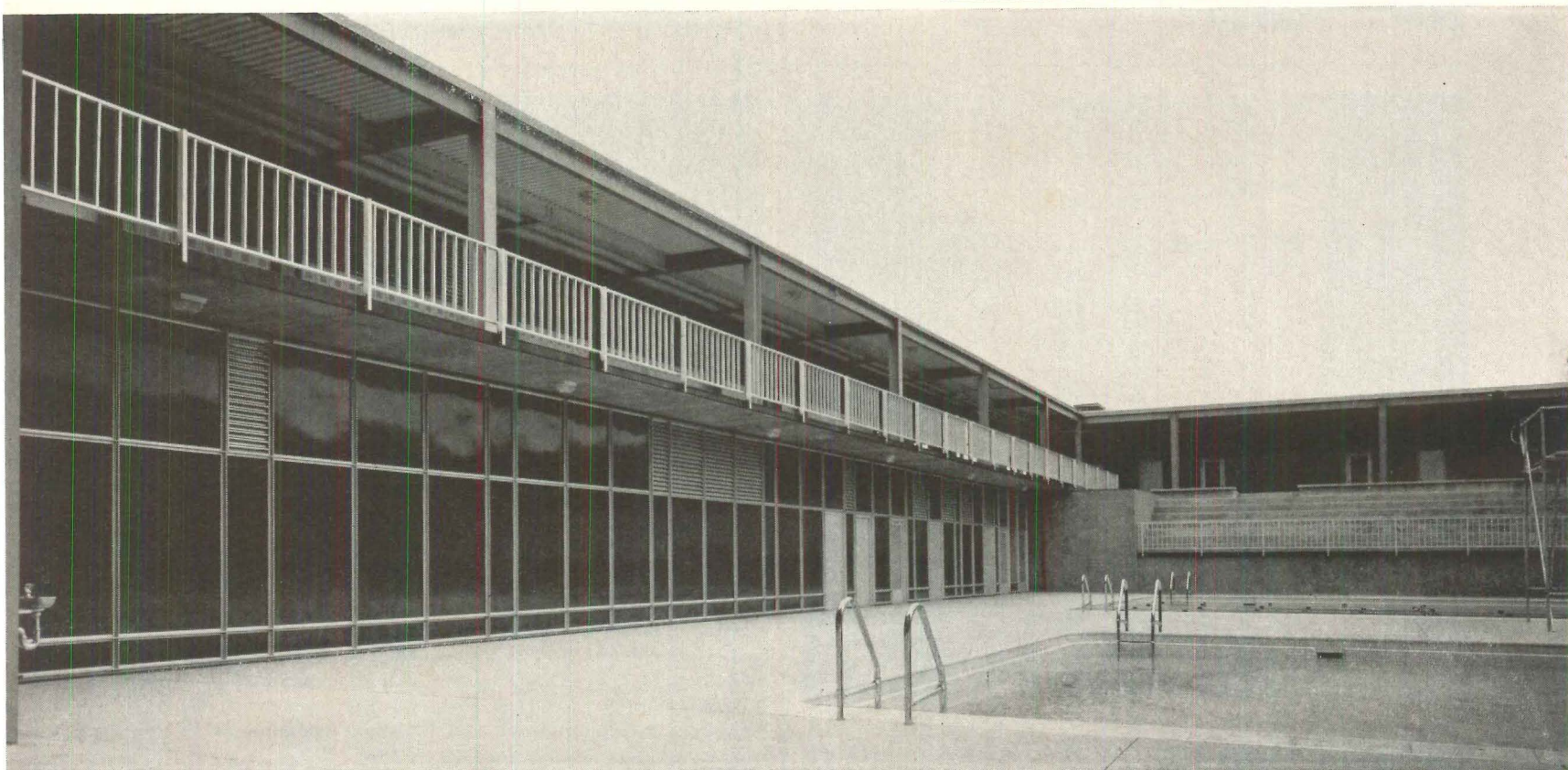
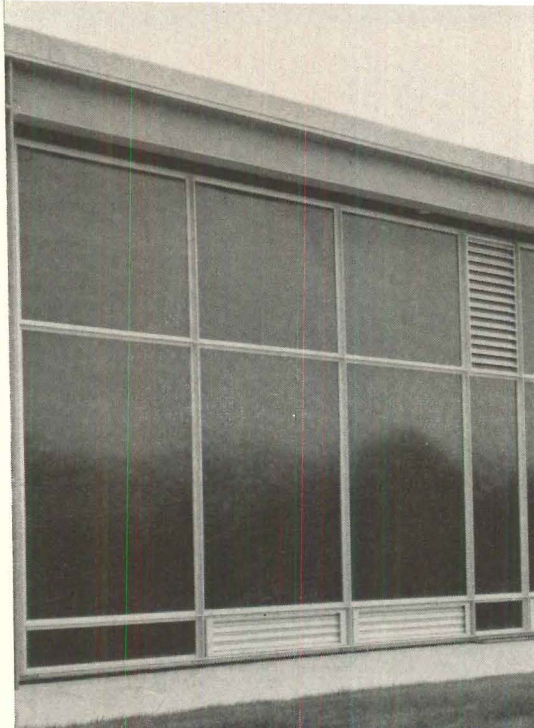
**GERMAN CHURCH.** A sculpture-topped campanile (left) rises from an interior courtyard to dominate the austere entrance of the St. Pius X Church near Cologne. Architect Joachim Schürmann's competition-winning design has provided the nave with an airy baldachin, a space frame of pipes welded together with steel sockets. The lightweight roof of the two-story nave, and the walls suspended from it, are delicately balanced on four tapered white columns, two at each end (photo above and section below).



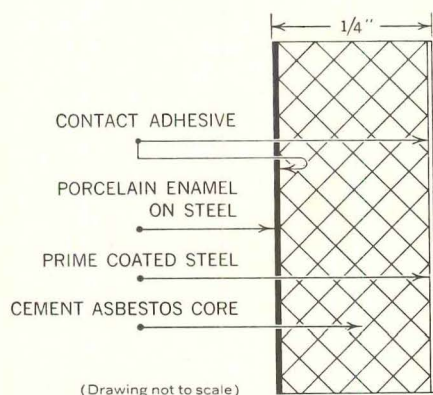
PHOTOS: CAMERA PRESS FROM PIX



# Panels bonded with Armstrong adhesives give trim, sheer look to new high school



Crestmoor High School, San Bruno, Calif. (Above) Detail of façade of one-story section. (Below) Gallery and grandstand for pool spectators. Architects: Reid, Rockwell, Banwell, and Tarics. Panels made by Mirawal Pacific, Inc., Hollister, Calif.



Gleaming laminated panels—more than 50,000 square feet of them—enliven the gal-  
leried façade of this new high school at San Bruno, California.

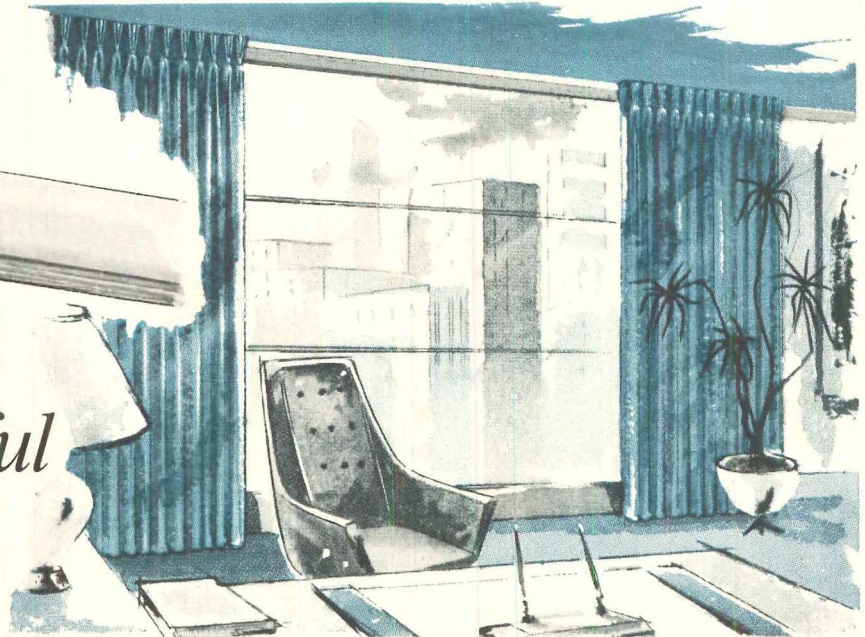
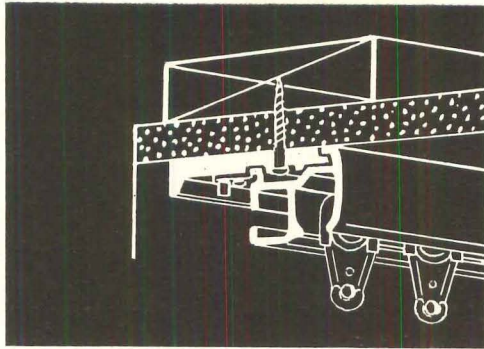
The mild climate permits the use of panels that are just a quarter-inch thick. Bright  
porcelain enamel steel forms the outer surface; painted steel, matching the school's decor,  
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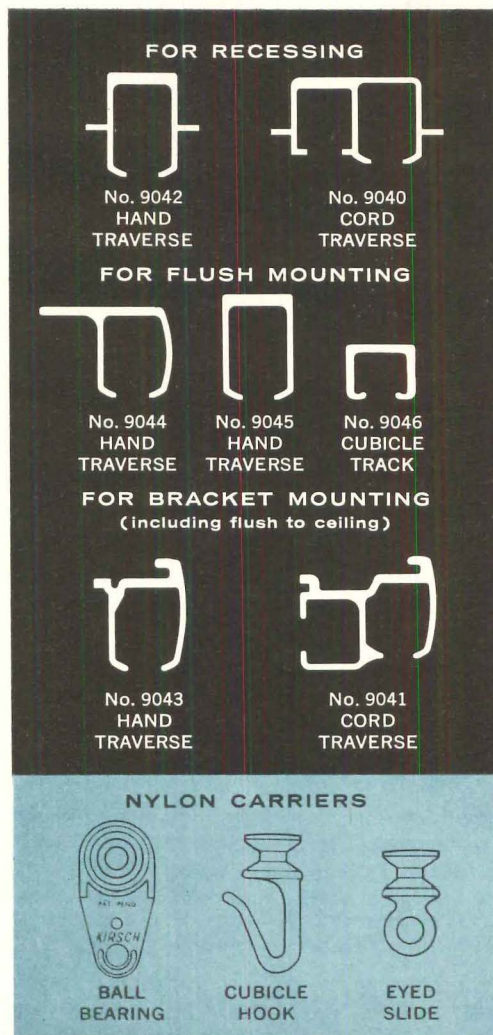




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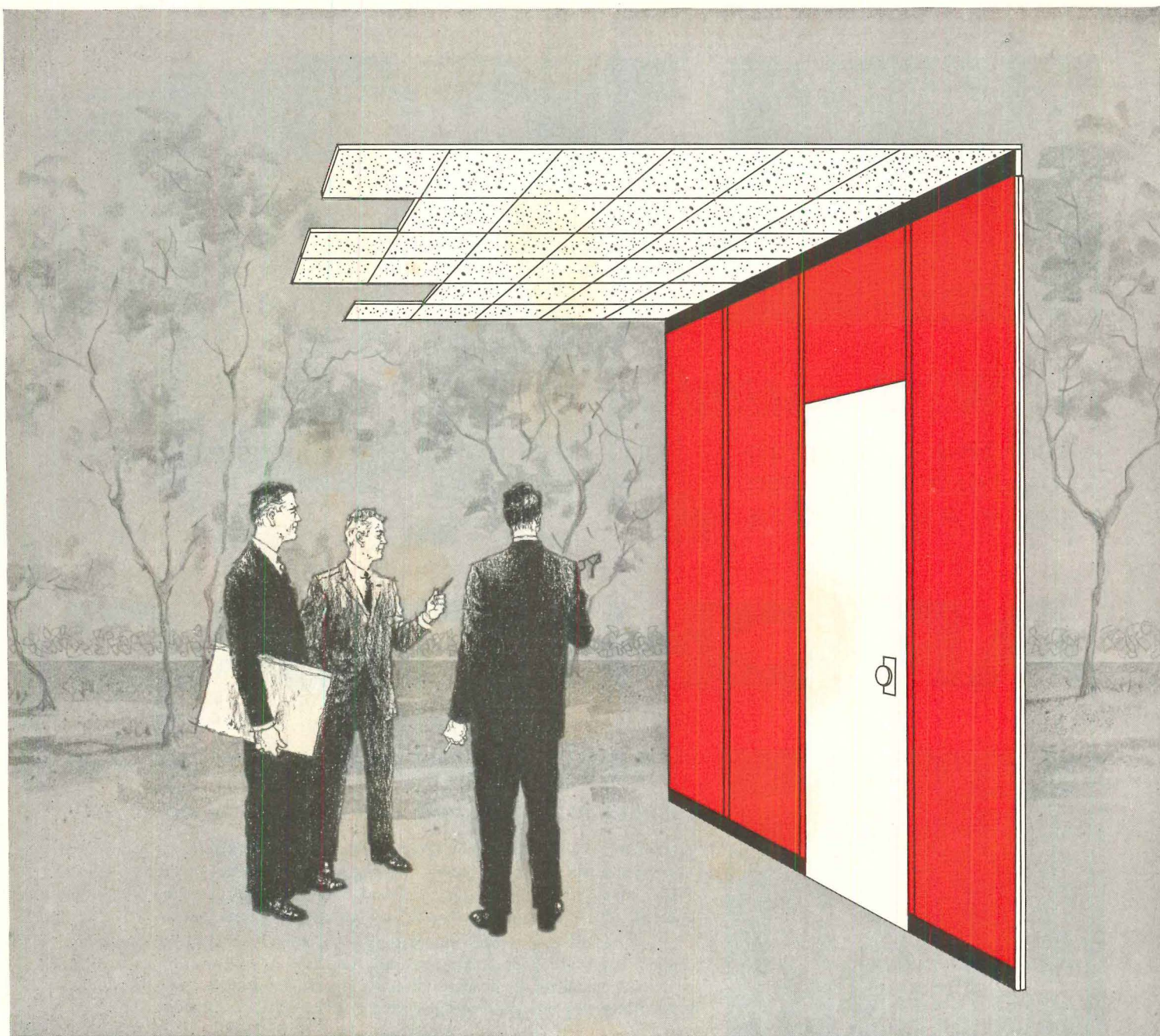
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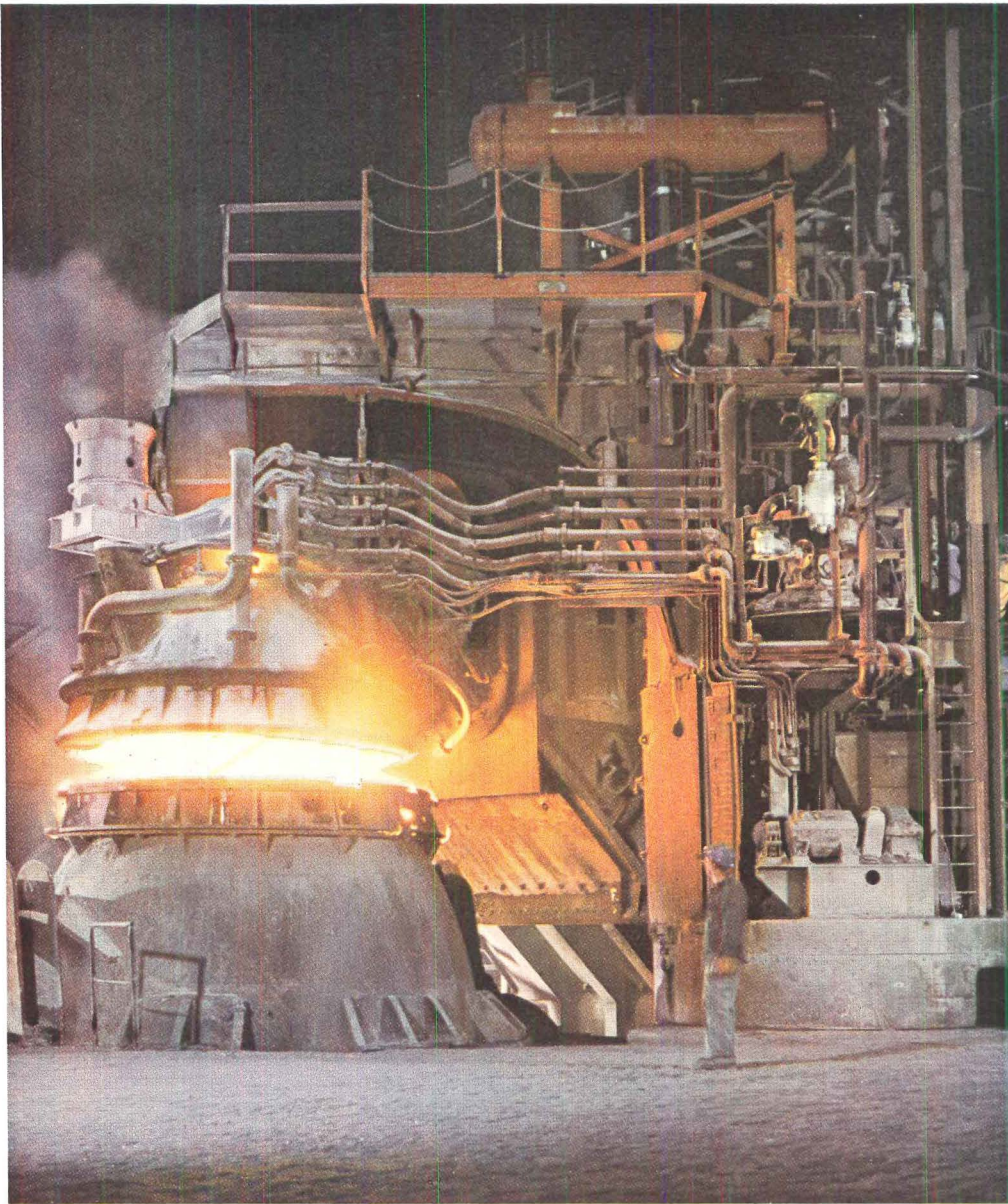
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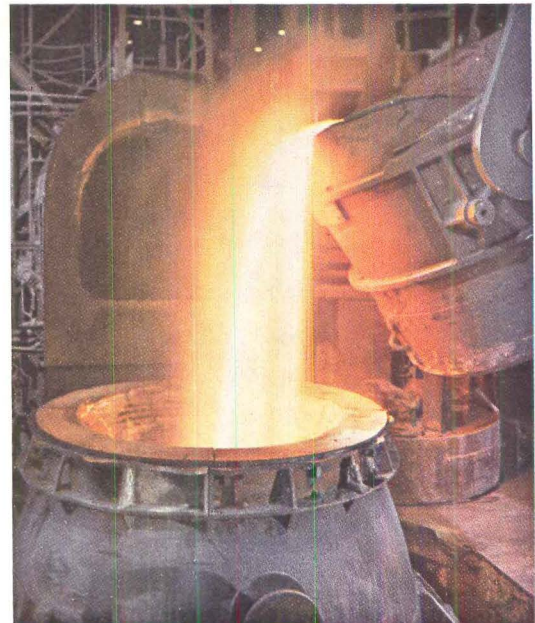


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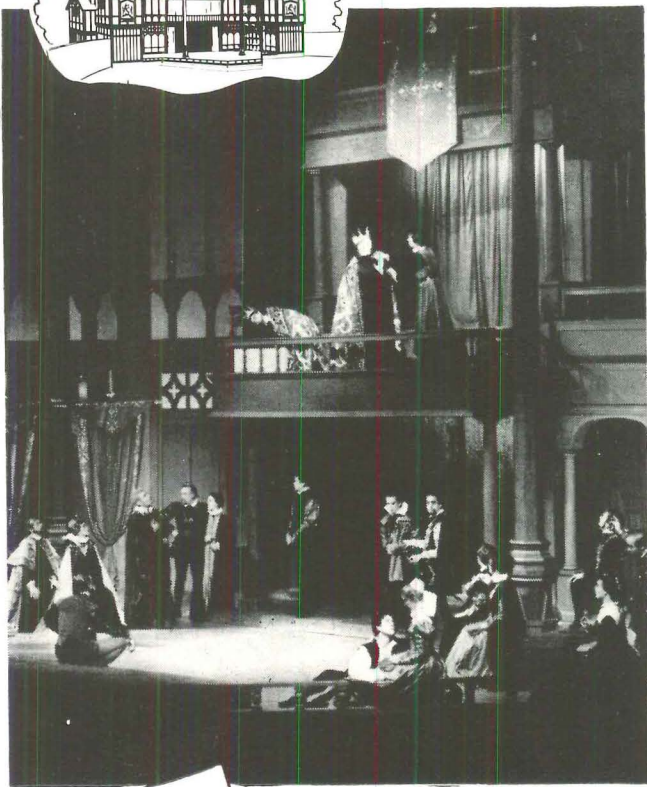
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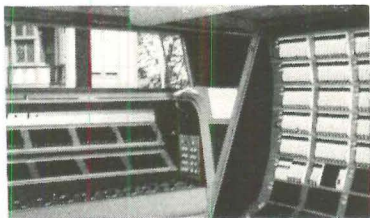


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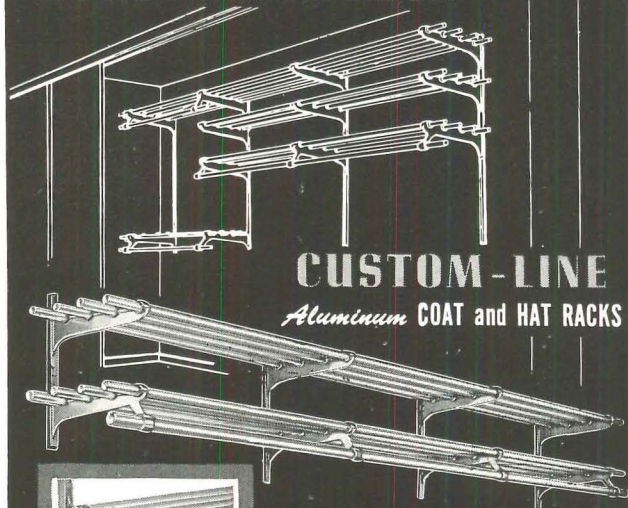
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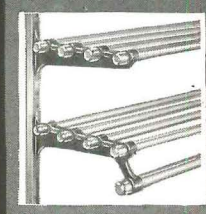
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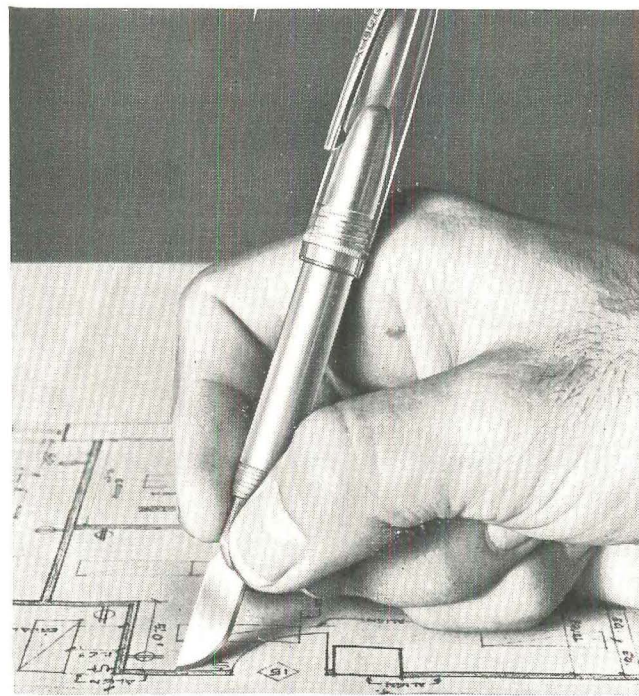
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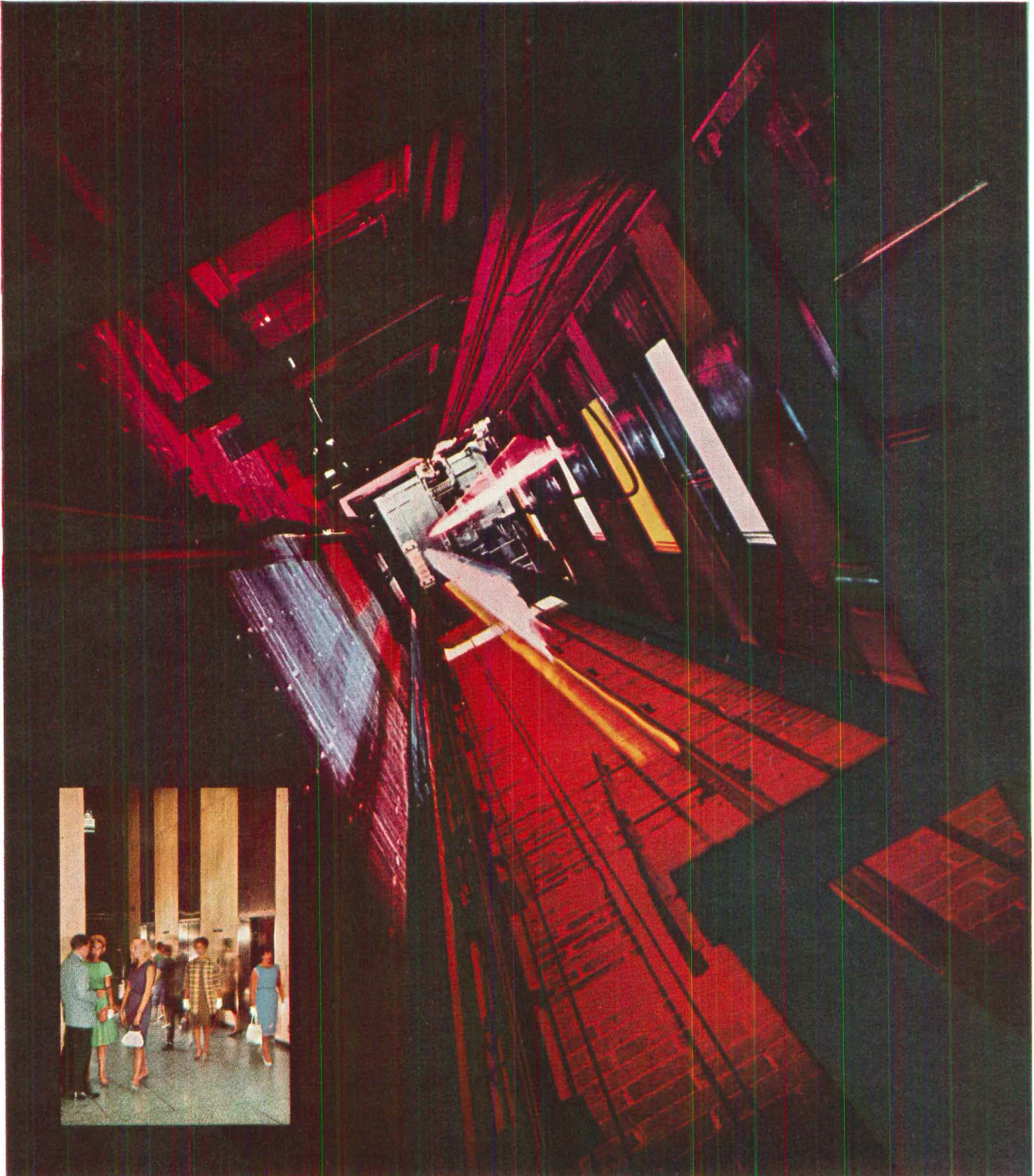
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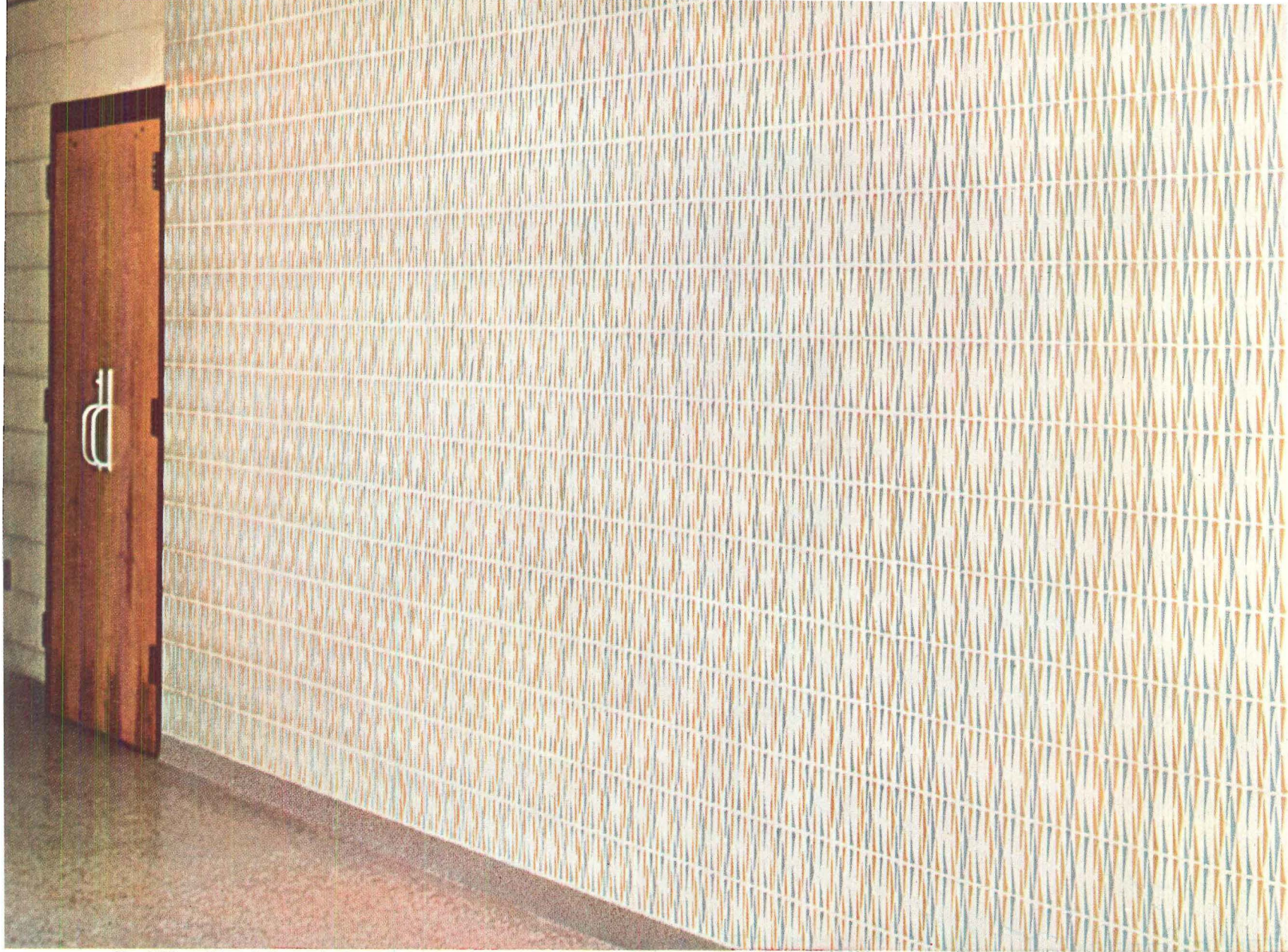
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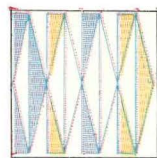
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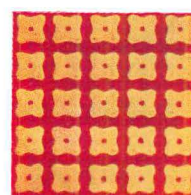
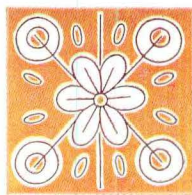
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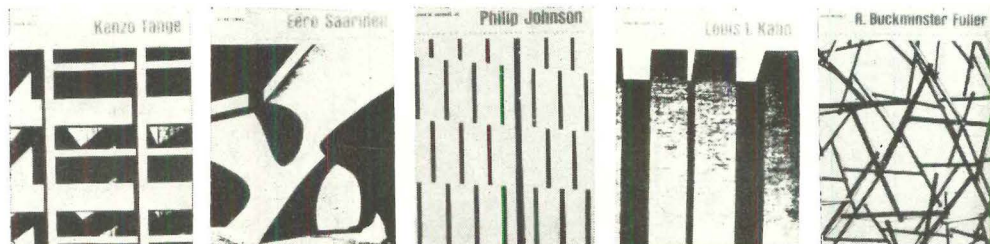
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## Tallyho, tradition!



**EERO SAARINEN.** By Allan Temko. **R. BUCKMINSTER FULLER.** By John McHale. **LOUIS I. KAHN.** By Vincent Scully, Jr. **PHILIP JOHNSON.** By John M. Jacobus, Jr. **KENZO TANGE.** By Robin Boyd. Published by George Braziller, Inc., 215 Park Ave. South, New York 3, N.Y. 128 pp. 10" x 7½". Illus. \$4.95 each.

REVIEWED BY WALTER McQUADE

Ten short years ago, to have been confronted with these five books would have been inconceivable. In 1952 it was apparent that the industrial style in architecture was well beyond its peak, and waning; but eclecticism, the old fox, was considered securely in its trap. The profession still was looking forward.

The past in architecture, however, is a wily beast, well armed with "richness," "meaning," and even "humanity," quick to escape traps. In the absence of bigger quarry, architects will always go on a fox hunt, and the cry today is *tallyho, tradition!* In this new quintet of Braziller monographs, it is made clear that Johnson uses tradition, Kahn relives it, Tange perhaps abuses it, Fuller himself has become a tradition, and Saarinen still refuses to be defined.

As a group the monographs are good; this short form (plus or minus 45 pages of text and 32 pages of photographs) is more appropriate to the work of these men than it was to the masters who came earlier in the series.\* The outlooks of the writers on their subjects vary, however, ranging from the almost religious feeling of omnipotence which John McHale ascribes to Bucky Fuller, to a somewhat reserved yet always lucid account of Tange's buildings, and his cultural problems, by the Australian Robin Boyd—a superb job of clarification.

It turns out that Tange badly needs clarifying. In much of his short career this quietly winning, highly organized Japanese architect has seemed a designer in the Corbu idiom. But, however expertly he applies the Corbu style (and on the whole he may use it a little too immaculately), his succession of heavily spectacular concrete buildings, observed from afar, eventually has gone flat, implying hollowness. But Boyd corrects this impression, making Tange again as interesting as he was when the Hiroshima Peace Hall project, the architect's first work (designed in 1949), was published.

Tange, says Boyd, is a determined realist, who refuses to work or play with tradition, even as elegant a one as the old Japanese.

This delicate culture of the eye "is something he deeply respects and has loved. But it also awes him and almost repels him because of the suffocating influences it could have on his own creative activities."

Thus die delicacy and architectural tact for a modern Japanese architect? Well, not really for as good a one as Tange, of course—but his gracefulness does put on weight and masculinity. The old taste changes.

Japan today, it seems, is a strange, turgid place in taste, perhaps not really stranger than Chicago or Milan, but seemingly so, possibly because the Westerner simply expects a little more of that old *tatami* when he gets off the plane at Tokyo. What he finds instead is a visual shambles. Away from the big city, Boyd reports, things still appear classically fine, but the era of meticulousness in Japan is past. For example, Boyd points out that most of Tange's buildings are miserably maintained.

Why their heaviness? Because Tange "wants architecture to insist." He strives to confront industrialism: "It is a problem of technology versus humanity, and the work of today's architects and city planners is to build a bridge between those two things." It is the primitive life-force of the Japanese people that concerns Tange, not the delicacies. To him, the traditional Japan has become a fiction, an old aristocrat trying to impersonate a young factory worker. He wants to express the reality, the complex of new human problems in industrial Japan.

One cannot help but respect his ambition, and wonder at it, too. When Tange's work echoes the West (his latest building appears to be Le Corbusier's church at Ronchamps, very deftly reordered as a Japanese golf clubhouse), reflect on what Boyd reports of the confusion of the emerging middle class in Japan: "Almost all really fashionable girls who can afford it have their eyes surgically altered; and every doll in the department store stares at the Japanese child with round blue eyes in a blonde head." Tange says: "Reality is a movement which includes inconsistencies. To discover order within these inconsistencies and to give form to this order is our task."

### THE SENSITIVE PRACTITIONER

It is difficult to think of Philip Johnson attempting to probe a mass psyche, to express it in architecture. Instead, like most Western architects, he is applying personal vision, taste, and, in his case, scholarship. He has, for example, gone back from Mies

to Schinkel, re-enacting history. But, necessarily, it is history in reverse.

In his monograph on Johnson, John M. Jacobus, Jr. calls this architect a "traditionalist by necessity." Writes Jacobus: "Clearly, Johnson is not primarily a pioneer or explorer. He is, instead, an architect whose work mirrors, clarifies, and expands accomplishments of the recent, still-relevant past . . . filling in a few blank spaces. . . . If Johnson's work is academic in spirit, he is no less a modernist because of it. The acceptance of this paradox is mandatory to a sensible appreciation of today's characteristic architecture. . . ." Yet this is a mightily difficult paradox for anyone to accept, particularly for the new generation of students.

One of the troubles with the modern movement is that the spontaneity seems to have run out of it. This is not Johnson's fault, but his generation seems to be inheriting the blame. And sometimes, strangely, Johnson, with his own quick candor, does appear to have been asking to shoulder this burden all by himself as he has gone about proving in the past decade that he can do almost anything with his taste and talent.

### THE TOUGH TRADITIONALIST

Louis Kahn never really felt comfortable in the International style because of his strong Beaux-Arts background. He muddled around with the industrial style in the 1930s, but then after World War II he began to emerge as a teacher and architect, took a year at the American Academy in Rome, and came back with his convictions re-established in regard to those great academic basics: order and masonry massing. Today he refuses to design a steel frame building!

Kahn's work is crammed with conviction. His sense of history is not academic, but theatrical, not intermittent, but fiery. His buildings are exciting. He begins designing them with a forceful inward conception of "what the building wants to be," then bends all efforts to completing its destiny by paying strenuous attention to operating requirements for purposes of architectural characterization. As Vincent Scully points out in his affectionate monograph, Kahn's process is both intuitive and inductive: "Through Design, Form is made material . . . [then] Kahn *wants* to be told everything about possible uses for various areas so that he can derive 'meaningful' new shapes from the functional processes themselves."

Kahn himself puts it: "A building has to start in the unmeasurable aura and go through the measurable to be accomplished. You must follow the laws but in the end when the building becomes part of living, it evokes unmeasurable qualities."

And this is Kahn's secret, almost unique in architecture today. His work really does have "aura." The reality of some of his

*continued on page 150A*

\* Masters of World Architecture: Aalto, Gaudi, Gropius, Le Corbusier, Mendelsohn, Mies, Nervi, Neutra, Niemeyer, Sullivan, and Wright.





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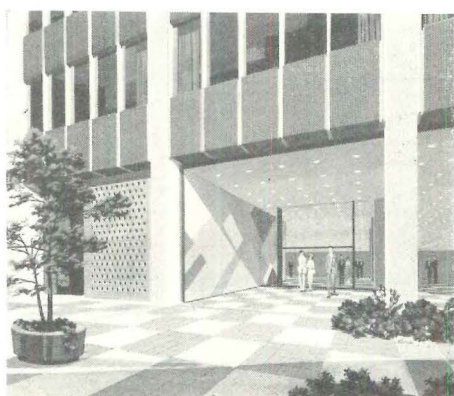
Design project: a commercial office building entrance. The designers: the New York architectural firm of Kahn & Jacobs. Here's another vivid reflection of architectural awareness of ceramic tile's growing role: for beautiful exterior walls, distinctive floors, colorful spandrels.

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THE MODERN STYLE IS . . . .



continued from page 149



*Design for a commercial office building entrance by Kahn & Jacobs*

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buildings is reported sometimes to impose on the users physically—but this presumably is to be excused, as it is in the work of the great architects. As Scully says, "His schemes do not always come off; they can be uniquely awkward. There can be little doubt that this tendency is a necessary concomitant to their primal strength." Scully places Kahn very high—"unquestionably first in professional importance among living American architects" and, a very moving writer, he does it convincingly.

## THE SELECTIVE MEMORY

Among the most interesting pages of Scully's eloquent essay are the author's own musings on the matter of delving into the past for architectural form. At one point Scully describes Kahn's design process for a part of the Salk Institute for Biological Studies, a very Roman pattern: "An early sketch had been traced by a draftsman, partly as a joke, from a plan of one of the units of Hadrian's Villa itself. 'That's it,' said Kahn."

Scully then goes into Frank Lloyd Wright's earlier interest in Hadrian's house, as a source, and is soon well on his way to a wistful justification for the outward as well as inward infatuation with the Roman forms: "It is probably no accident that both turned to Hadrian, since that haunted Emperor was perhaps one of the first, certainly one of the most conspicuous, men in Western history for whom—all ways having opened, which more true than another?—conscious, selective memory was a major determinant of life.

"Is this a pervasive problem of the modern world—all possible, nothing wholly serving, no way the only way, memory all too free to choose? If so, does such inevitably prevent a direct view of present problems and so limit creative capacity or divert it toward easy eclecticism? It cannot be said to have done so for Hadrian himself, or for either Wright or Kahn. . . . If [Kahn] can advance . . . toward integration, not away from it—keeping, can one say, the 'dream' and the 'reality' in balance, the present and the past in his hands—he may yet endow his age with an image of wholeness matched only by Wright's and Le Corbusier's and so most rare in it up to now. Such rarity should not be considered surprising, insofar as it is linked to that rarest of human gifts, the instinct for how and what to remember."

A few pages later, Historian Scully caps his plea: "One point seems clear: that to make anything in architecture, which has always been a large-hearted art, it is necessary to have loved something first."

## A TRADITION ON TWO LEGS

Tradition does not press upon Richard Buckminster Fuller. He seems far beyond it. Actually he is a technological transcendentalist out of nineteenth-century New England, but we don't really find this out here. John McHale's monograph on Fuller

is disappointing as the result of a decision which McHale made not to attempt to include "the internal dialogues which accompanied and energized" Fuller's brilliant work.

What remains is an orderly, very admiring, useful story of Bucky's activities from the year 1927, when he retreated into his "energetic geometry" from a world which seemed to him interested only in simple structural arithmetic. Bucky's deceptively mild diction does creep in—or, as Bucky might say, impinges—on even as clear a chronicler as McHale: "The direction toward full autonomy obviously lay in re-assessing bathroom and toilet facilities and in the overall use of economical sharing and conversion energy systems employing mechanical core principles and utilizing wherever possible, the naturally impinging energies of wind, sun, and rain as part of the total energy accounting."

## THE END OF A BEGINNING

There is little doubt that Allan Temko took on a very difficult job in trying to explain Eero Saarinen. His is a worthy attempt; there are passages of heroically vivid description and of equally telling condescension. But perhaps, as the author himself observes, it is too soon after this architect's abrupt death even to begin to sum him up—so soon, actually, that some of Saarinen's most important works are not yet complete. Saarinen remains enigmatic as a creative artist, still misty behind those clouds of purpose and thunderous techniques. His is a career tantalizing to project, however. Would he, too, have turned more evidently to the past for his forms? I doubt it. One of the losses in Saarinen's death was the fact that he believed so hugely in the architectural future, and ran so fast, with such determination, into it. At times he seemed to be running interference for the whole profession.

The coverage of Saarinen's major works is good, and the critical ratings both interesting and arguable. Temko calls General Motors Technical Center impressive, but a chancy combination of Mies and romanticism; IBM's lab in Westchester, superb glass wall, insufficient conviction in stonework; Bell Labs "a civilized beacon of human knowledge . . . a work of fully matured genius"; Deere & Co. headquarters (now being completed in Moline, Ill.) a victim of "overstatement"; the CBS building (also under construction), "masterfully ordered" but perhaps over simple and not Saarinen at his best; the Jefferson Arch, "an American work of art, comparable to the Washington Monument"; Dulles Terminal, "Saarinen's own consummate masterpiece . . . a platonic ideal of an airport, imbued with Aristotelian realism, which the masters of Chartres and Michelangelo might have fashioned, had such artists lived in the second half of the 20th Century."

*continued on page 156*

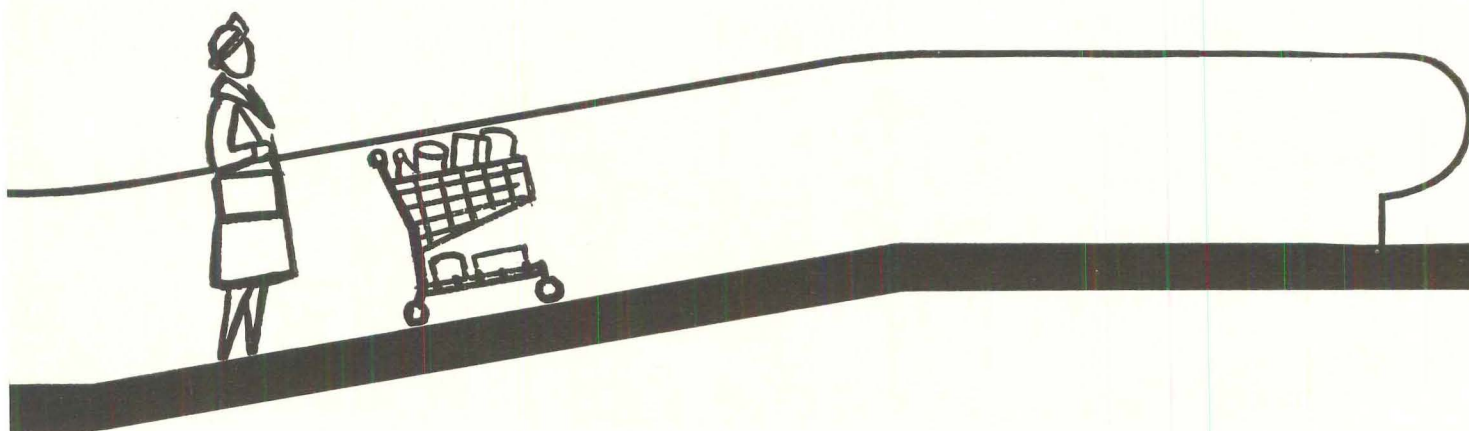




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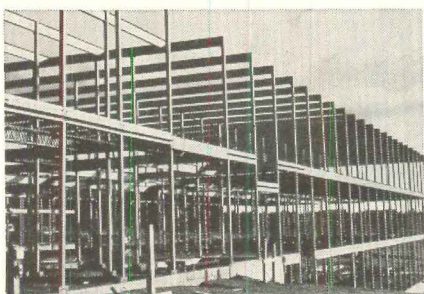
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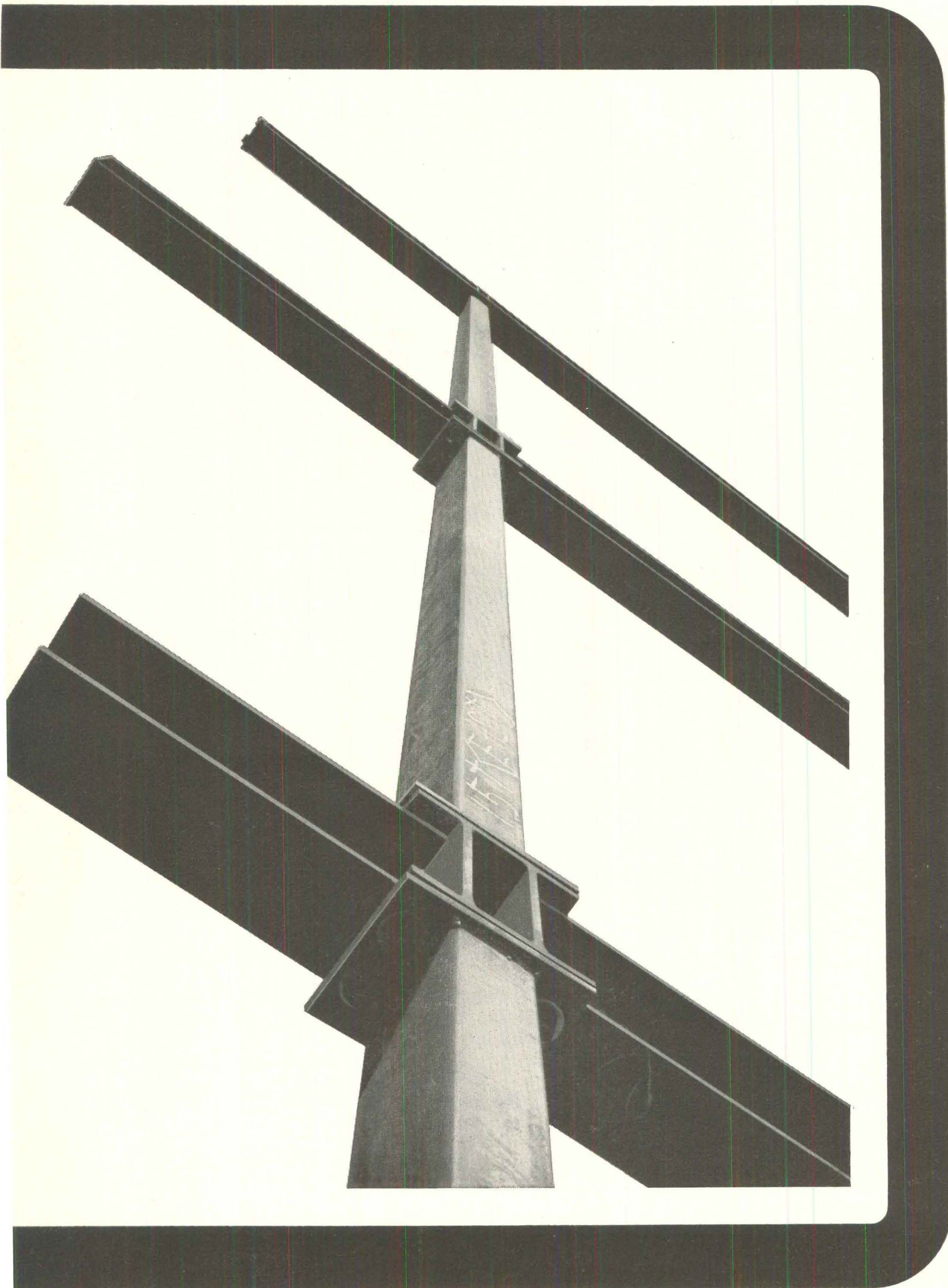


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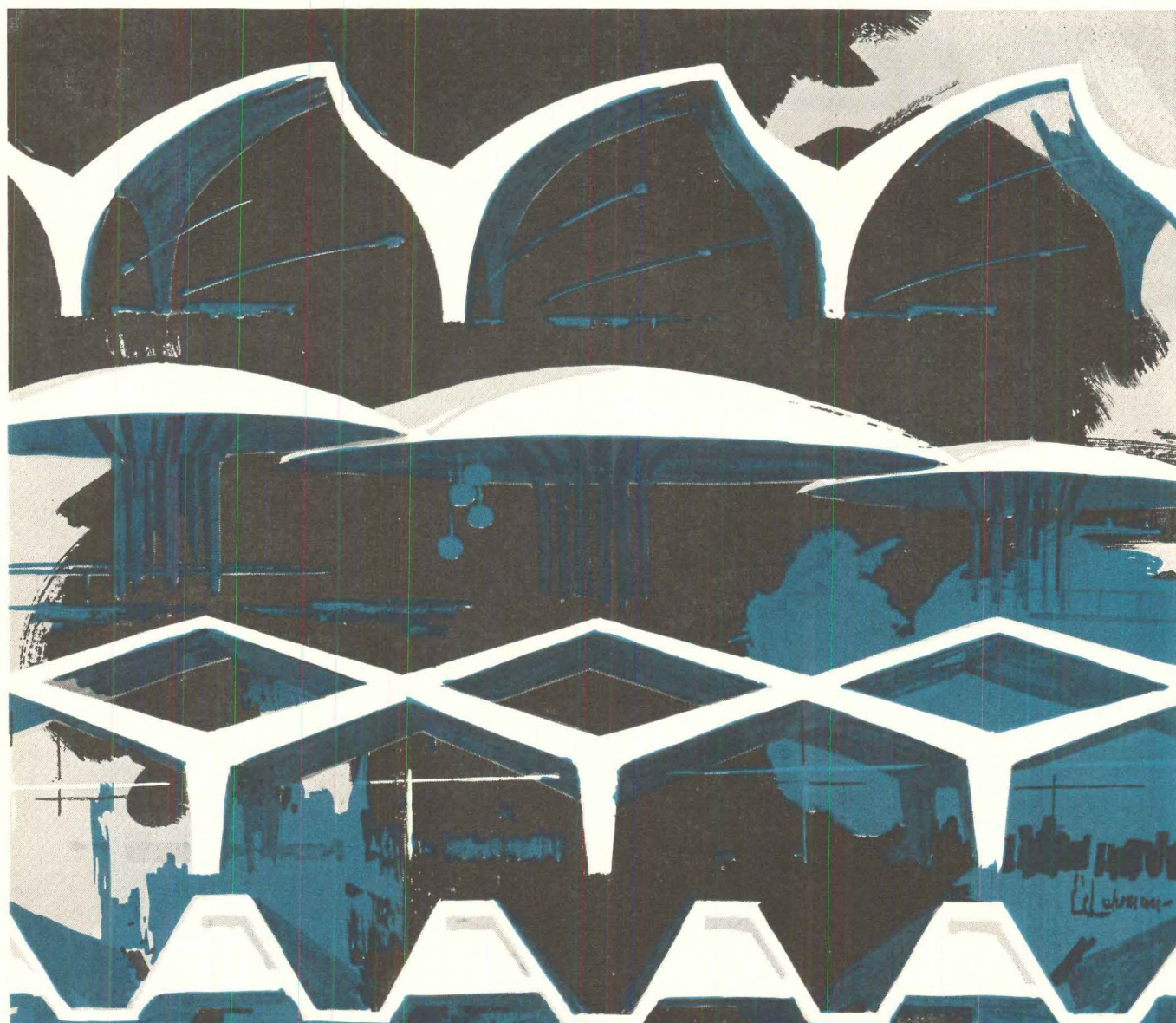
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Palm Springs Spa Hotel, Palm Springs, California. Architect: William F. Cody, A.I.A., Palm Springs, California. Associate Architect: Philip Koenig, A.I.A. Fabricator: Riverside Steel Construction, South Gate, California









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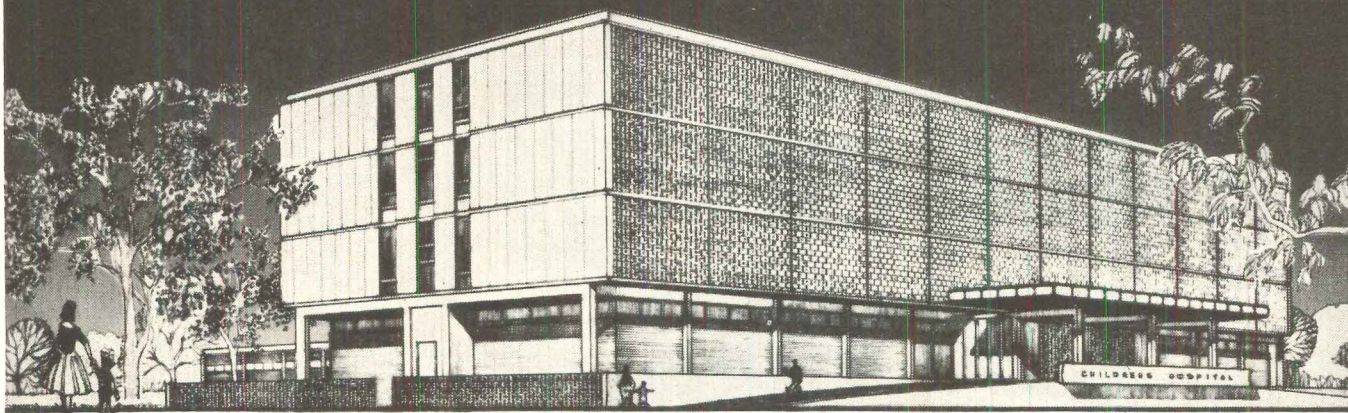
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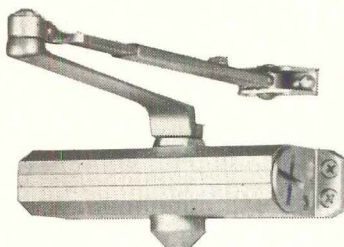
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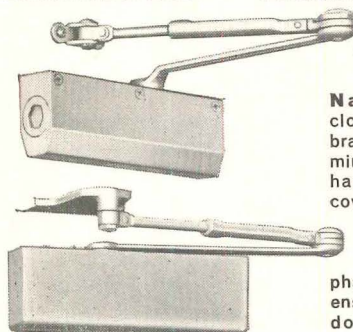
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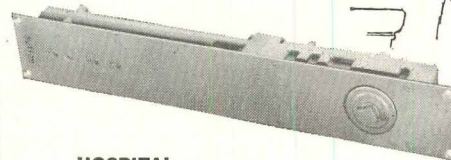
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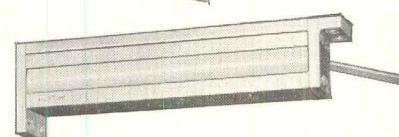
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**MODULAR PRACTICE.** By the Modular Building Standards Association. Published by John Wiley & Sons, Inc., 440 Park Ave., New York, N.Y. 198 pp. 9" x 12". Illus. \$8.75.

"Modular design" refers to the practice of fitting architectural plans into a three-way grid of standard "modules" of 4 inches in such a way as to fit without special adjustment into this dimensional grid.

This book is a compilation of the best

modular practices in use to date as reflected by editorial team visits to 40 architectural offices in the U.S. and Canada. It is profusely illustrated with excerpts of actual working drawings from offices using modular practices, and is organized in such manner that it can serve as a handbook for individual draftsmen during office conversion, or as an office reference for continuous use of the system. It also provides an opportunity

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**FIRE PROTECTION HANDBOOK.** 12th Edition. Edited by G. H. Tryon. Published by the National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass. 6" x 8 1/4". 2216 pp. Illus. \$17.50.

A clearer, more attractive new edition of the NFPA's huge reference book on fire protection has now appeared. For anyone who wants to go beyond the limited and sometimes cryptic fire-protection provisions of the local building code, this book is essential. It explains how the regulations covering standard or special building situations have come to be as they are.

**THE COMPUTER REVOLUTION.** By Edmund C. Berkeley. Published by Doubleday & Co., 575 Madison Ave., New York 22, N.Y. 249 pp. 5 3/4" x 8 1/2". \$4.50.

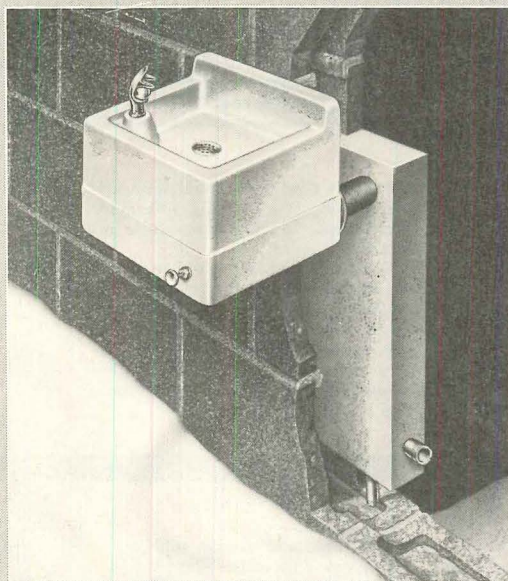
For someone who wants to learn how computers actually work and then sample some of the far-reaching implications of their use, Edmund Berkeley's book is a good "first reader." The book is lively and engaging because the author goes beyond the usual layman's popularization. He has an axe to grind. The book attempts to prove that computers can be taught to think, and hold high-level "discussions" (through the electric typewriter) with the user. He shows how machines with such fantastic powers can be a danger to civilization just as easily as they may be a helpful tool. Consequently, there is a need for social responsibility among computer people and public understanding and control of fast-breaking new developments in computer technology.—B.P.S.

**PERSIAN GARDENS AND GARDEN PAVILIONS.** By Donald N. Wilber. Published by Charles E. Tuttle Company, Rutland, Vt. 239 pp. 7 1/4" x 10". Illus. \$12.50.

The author is an architect, archaeologist, and board chairman of the Iran Foundation. The text is partly historical-descriptive; the 109 illustrations include plans and snapshots of surviving gardens and paintings and drawings from past centuries. The book is both romantic and exotic, but, as Mr. Wilber points out, there are lessons for present-day designers in the artful ways the Persians used plants and water to erase any firm line between buildings and gardens.

continued on page 160

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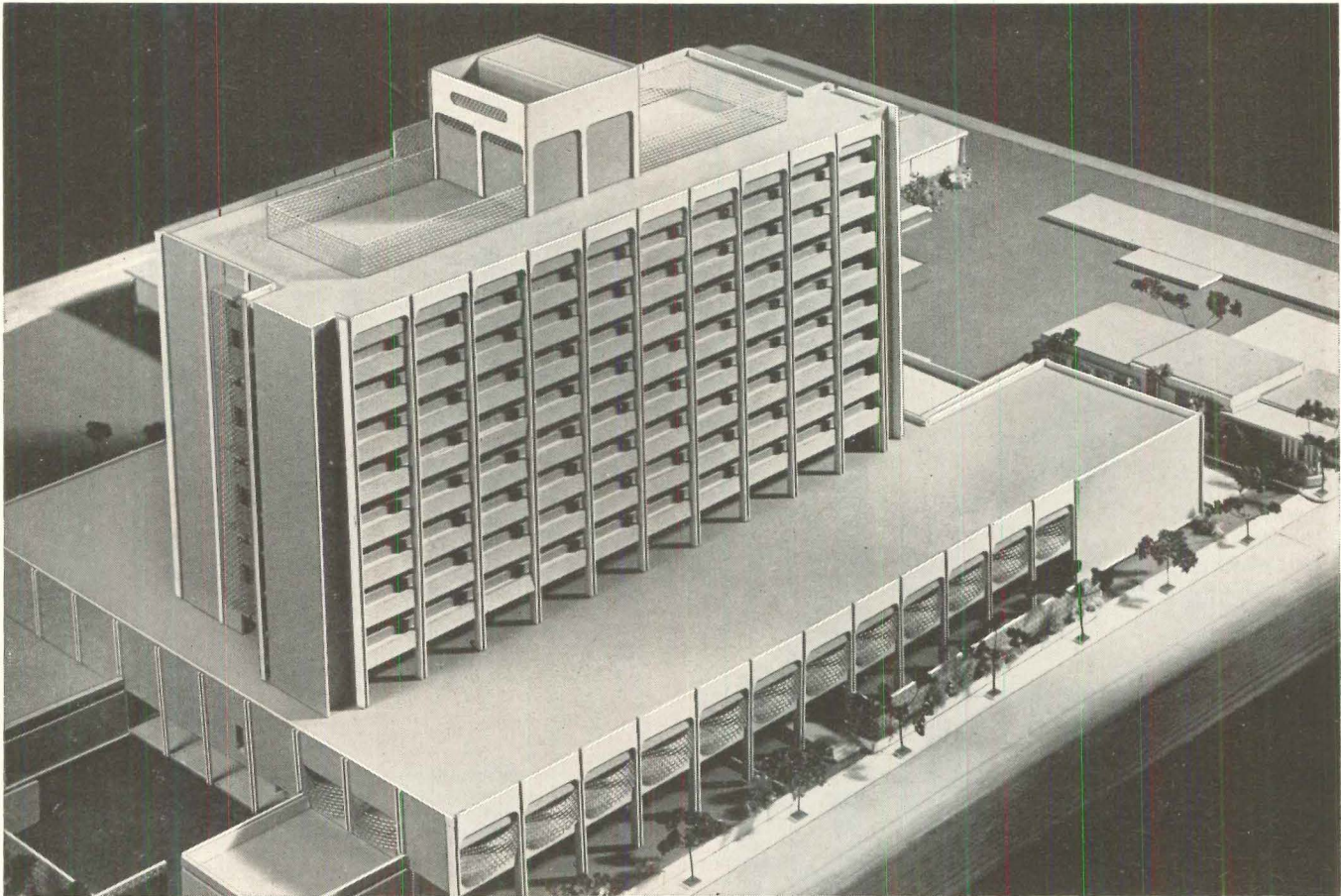
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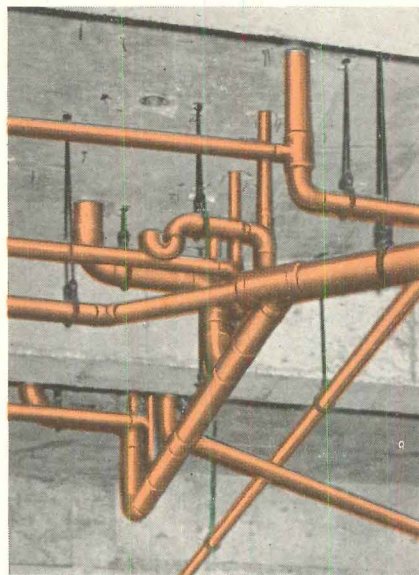
Model of San Diego County Hospital, San Diego, California. Architects: Paderewski, Mitchell & Dean, San Diego; Wulff & Fifield, San Diego. Structural Engineer: E. L. Freeland, San Diego. Mechanical Engineer: Ralph E. Phillips Company, Los Angeles. General Contractor: Robert E. McKee, General Contractor, Incorporated. Mechanical Contractor: State Plumbing & Heating Company, Los Angeles. Distributor: Keenan Pipe & Supply Company, Los Angeles and San Diego.

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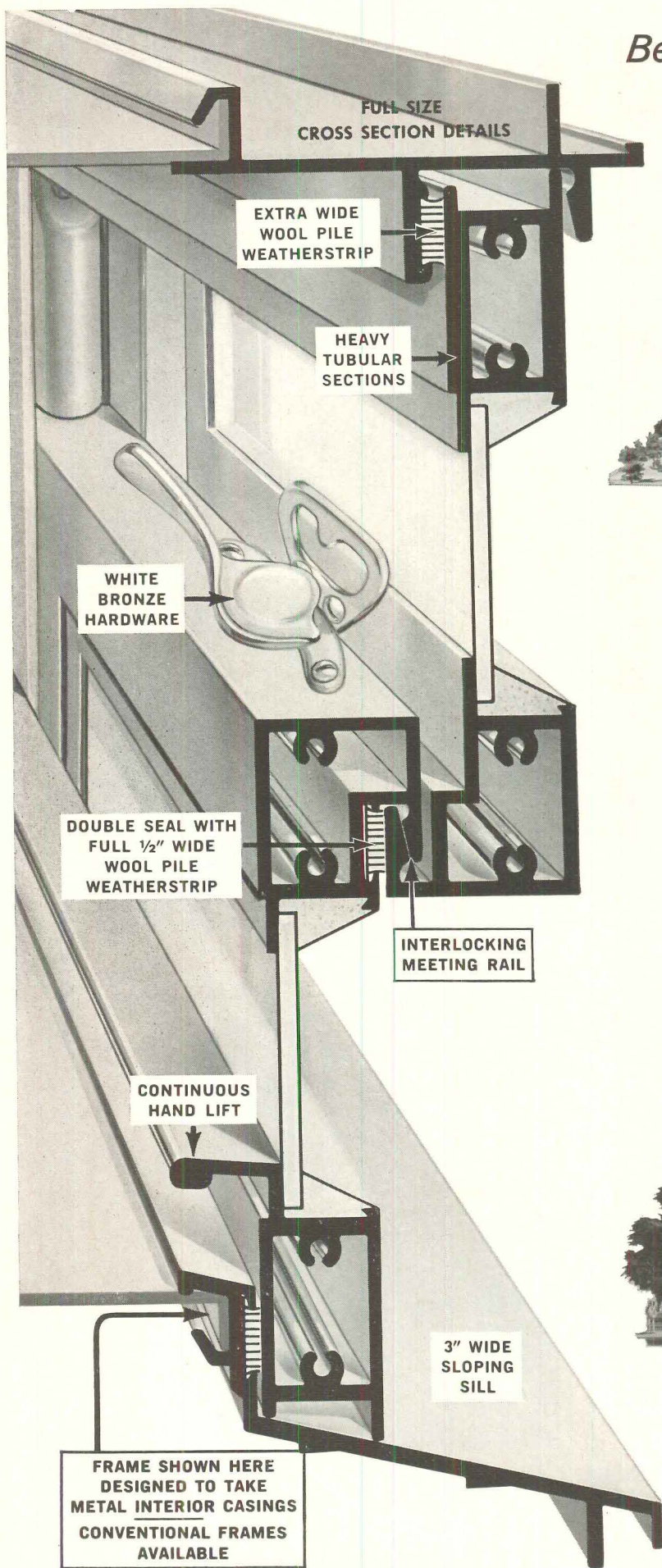
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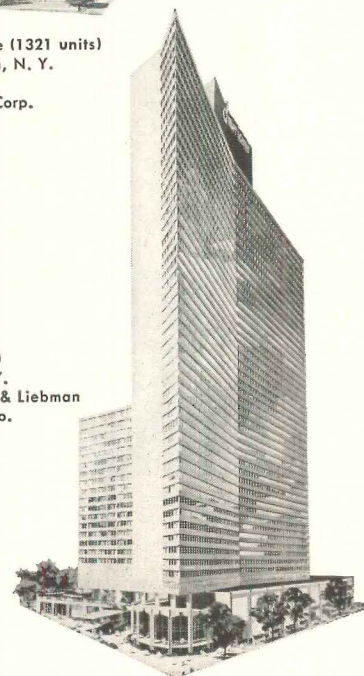
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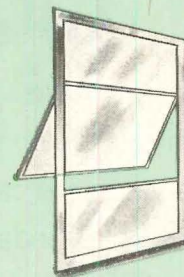
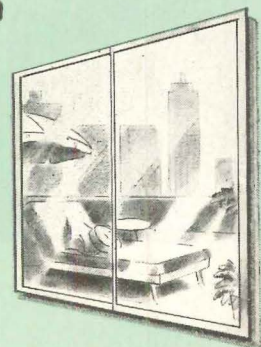
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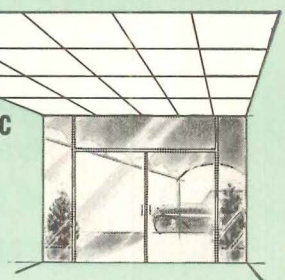


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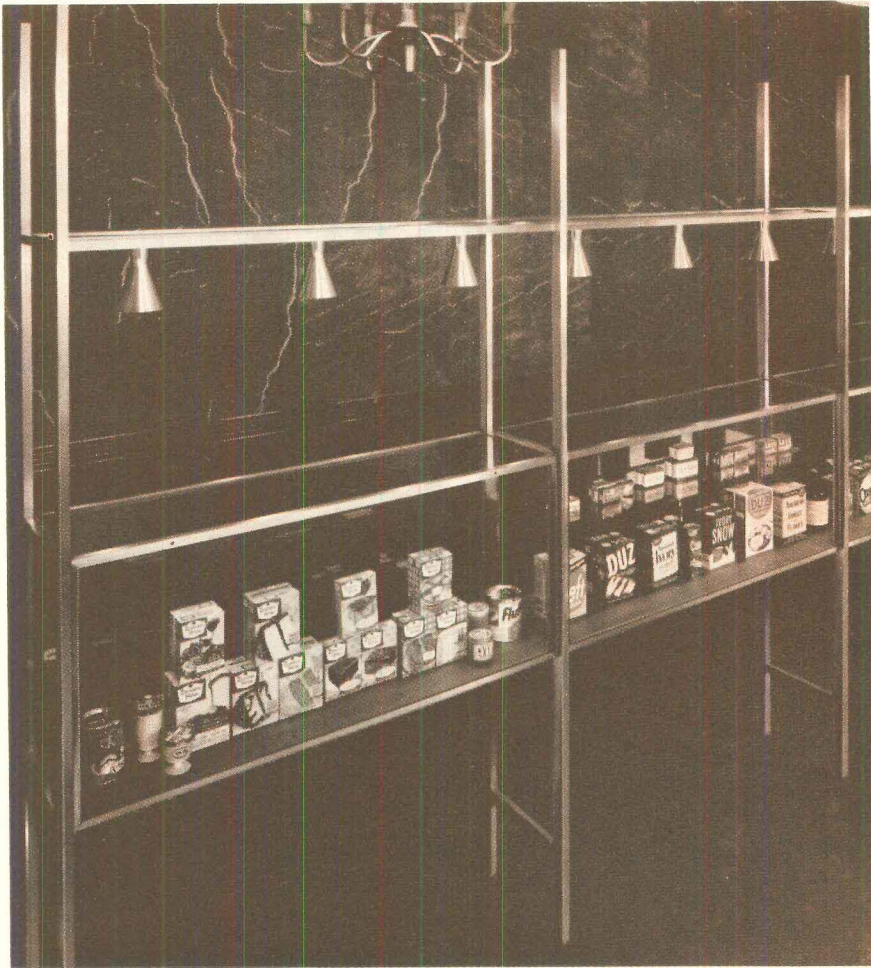
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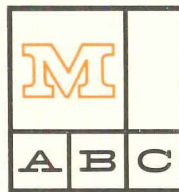
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**OUTDOOR RECREATION RESOURCES REVIEW COMMISSION STUDIES.** Available from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. 7 $\frac{3}{4}$ " x 10 $\frac{1}{4}$ ". 35¢ to \$1. Of 27 reports, 16 have been published. Some are noted below.

Against a background of Congressional inaction on the Wilderness bill, this series of reports for the Outdoor Recreation Resources Review Commission should be required reading for open-space lovers. The booklets explore in depth the component parts of the first ORRRC study (FORUM, Mar. '62), and each supports in detail just how much an expanding, increasingly leisured population needs recreational open space.

Study #2 locates the 282 million-plus acres of public recreational areas in the nation; #3 surveys wilderness tracts and recommends new policy and controls.

Shore lines are of the utmost importance in recreation, and the pressure on waterfront areas is steadily increasing—especially near cities, notes Study #4. What is needed, say the authors, is federal, coordinated, planned action to acquire some of the 90 per cent of privately held water frontage, and to develop other areas.

Users of public recreation lands, Study #5 indicates, in general do not know what the open spaces should offer them. Their wishes, then, should only be one element in forming a national policy for outdoor recreational resources.

If hunting is to survive as a recreational pastime, Study #6 warns, the federal government should ask the cooperation of other agencies to preserve wildlife and its habitat. Among the recommendations: hunting licenses and fees should reflect the costs of providing land and game; wildlife should be maintained under natural conditions, on land specifically set aside for hunting.

A concrete test is presented in Study #9—the federal government's handling of Alaska's tremendous, underdeveloped recreational potential.

Such recreational facilities as ski-tows and camping sites, suggests Study #12, should be owned and managed by private investment on the public lands. Although notably successful in the past, this concession system will need federal aids to act most effectively.

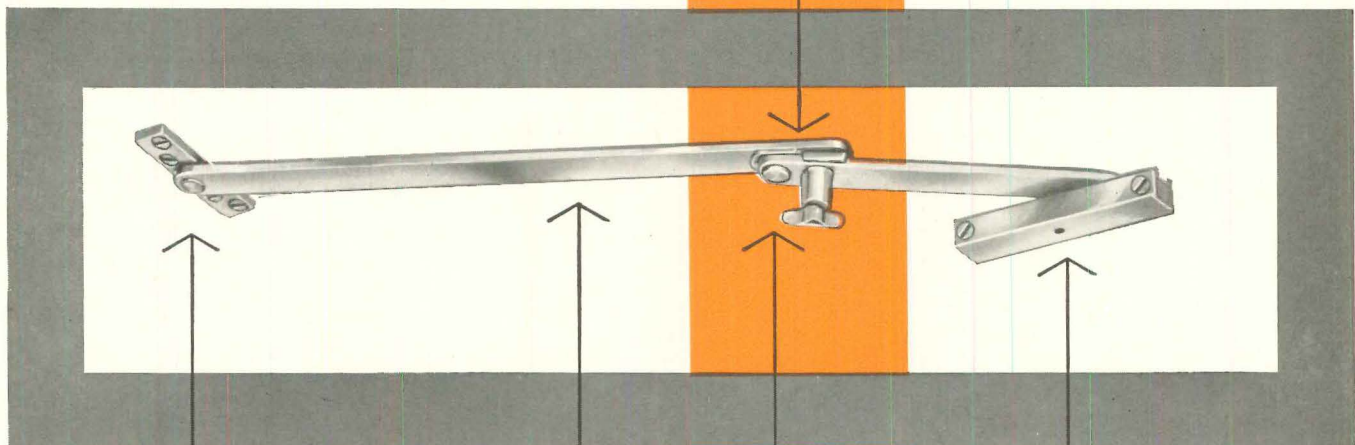
Whether the federal government likes it or not, it is in the recreation business; Study #13 shows that recreation visits to federal parks more than tripled in the 1950s—and still no overall policy exists among federal agencies. The study defines the problem explicitly.

Who uses public recreational facilities? Study #20 answers: 90 per cent of the population—all ages, all income levels, and from all over the country.

Several more studies will be released in the course of this year. They promise to make continuously important, if sometimes dry, reading.—P.H. END



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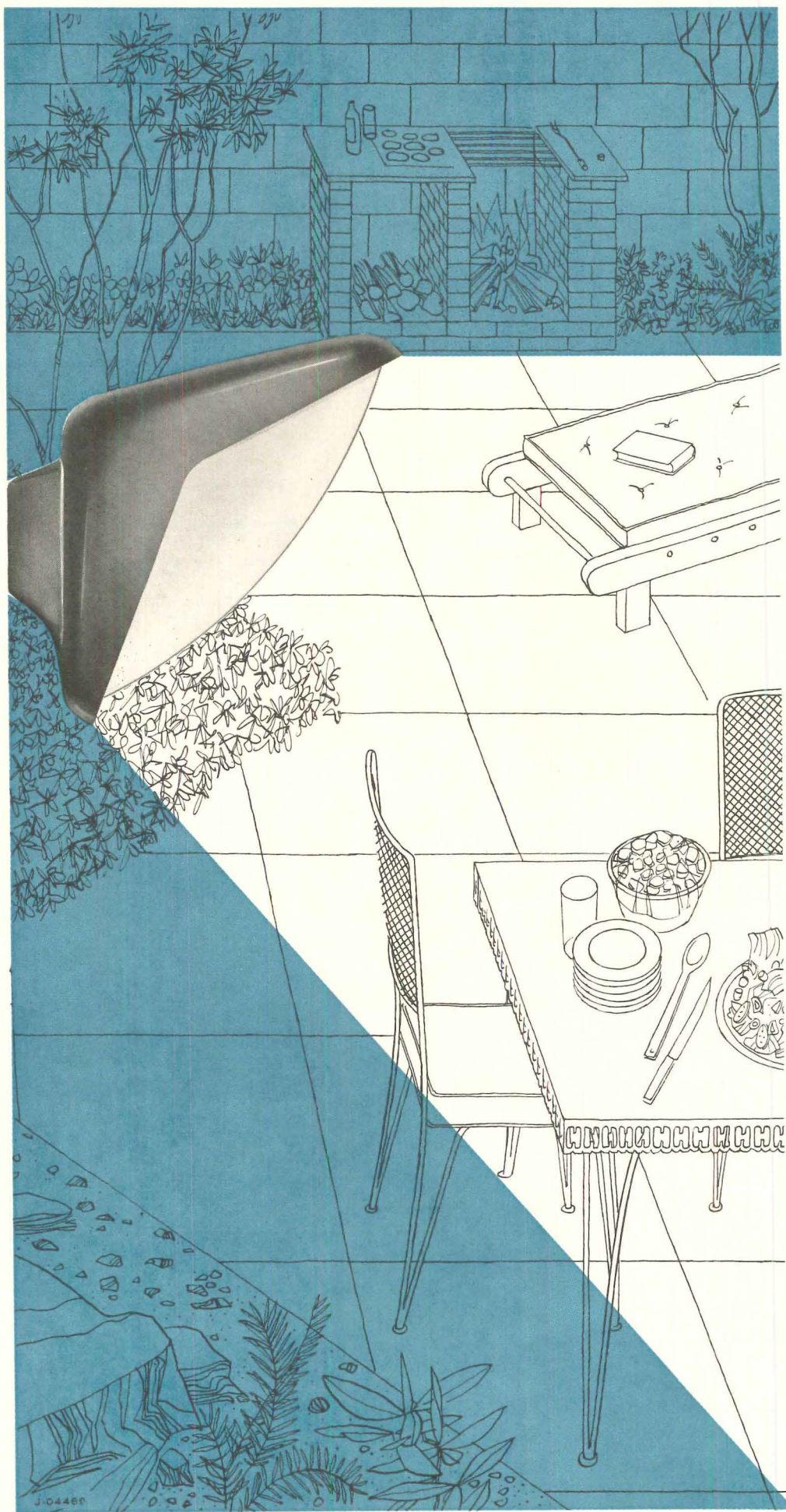
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